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Drago Resigns As Eng Soc President

Lukas Stras and Arnold Choi
Eng Sci 9T9 and Chem9T9+PEY

At the last Council meeting, Drago Banovic, who was elected President of the Engineering Society for the 1998/99 school year, announced his resignation to a silent room of his council executives, appointees and committee chairs.

Instead, he will move to Croatia, where he has been offered a full-time position in a government research facility. While he is expecting to be sent back to U of T to finish his degree, he is uncertain when this will happen.

"I'll be back in a couple of years, but it's still undetermined. I can't say for sure," he said during a telephone interview.

"I knew about this position for quite a while, but I didn't expect it to be offered to me until after I completed my degree."

Instead, he was offered the job recently, and although he said the decision was extremely difficult to make, he finally decided to accept the offer.

Please see *President Resigns* page 3

125 Years: A Tradition of Leadership

On March 29, 1998, the Faculty of Applied Science and Engineering celebrated the 125th Anniversary of its founding as the School of Practical Science. Prior to the unveiling of a commemorative plaque, Professor Peter M. Wright summarized the times and events leading up to the founding in the following words.

Peter Wright
Professor

The years just prior to the founding of the School of Practical Science in 1873 constituted a quite remarkable period in the evolution of Canada and its institutions.

By 1860, the Grand Trunk Railroad extended from eastern Quebec to Sarnia and plans were being made to close the gap with southern New Brunswick and Halifax. Southern Ontario was largely settled and Toronto was a flourishing centre for commerce, industry and transportation.

In part because of the railroad, Canada became a federation in 1867 of four provinces - Quebec, Ontario, New Brunswick and Nova Scotia. In 1870 Manitoba, under the leadership of Louis Riel, became part of Canada, and Canada purchased the land rights then held by the Hudson's Bay company to most of today's Manitoba, all of today's Saskatchewan and Alberta and the territories north of 60.

In 1871, British Columbia joined the fledgling nation subject to the condition that, within 10 years, a railroad would connect it to the central and eastern Canada. In hindsight the offer of such a railroad required an incredible leap of faith by Canada's 2 million people. The cost was estimated to be \$200 million, but that could only have been a wild guess, because even the route for the 4,000-km railroad was largely unknown.

How would Canada ever complete such an undertaking? In 1870 there were fewer than 500 engineers in all of Canada, and there were no engineering schools. Most engineers in Canada had received all or part of their education elsewhere. Sandford Fleming, who came from Scotland as a teenager, undertook an apprenticeship in Ontario as a land surveyor before moving into the engineering of railroads. Walter Shanly received his early education in Ireland



The main portal to the Old Red Schoolhouse

before coming to Canada, where had eventually become the chief engineer for the extension of the Grand Trunk Railroad west of Toronto. The contractor for that line was Casimir Gzowski, who had been a Polish cavalry officer before being forced into exile to United States, from where he moved to Canada.

Obviously Canada required its own system for educating engineers. The available options for Ontario were the apprenticeship system which had been adopted in Britain; the establishment of engineering education within the University of Toronto, or the establishment of a completely separate institution.

The apprenticeship approach was

unfeasible because there were too few engineers, and they were too dispersed. The second option had few supporters, because the University of Toronto had already demonstrated its lack of interest in engineering education. In 1852 the University had been given authority to appoint a Professor of Civil Engineering, but had never done so. Further only seven students ever completed the two-year diploma program established in 1852 in University College. (John Galbraith came to Toronto intending to enroll in this program but soon realized it was unsuitable, and took his degree in science and mathematics instead.)

See *Piece of History* - page 3

the Cannon

AN OFFICIAL PUBLICATION OF THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

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Established in 1977, *The Cannon* is a monthly publication of the University of Toronto Engineering Society, with a circulation of two thousand five hundred copies throughout the University of Toronto St. George Campus. The mandate of *The Cannon* is to publish information that is pertinent to the interests of the engineering student body.

Subscription information is available from Julie Wilkinson at the Engineering Society at (416) 978-2917. For advertising rates, production deadlines, and other information please contact Engineering Communications office at (416) 978-5377.

PLEASE NOTE

The Cannon is a medium through which undergraduate engineering students can express their opinions. The views expressed herein are those of the author and do not necessarily represent those of the editors or the Engineering Society unless so indicated.

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Editorials & Opinions



From the Editor

Arnold Choi

The Cannon 1998-1999: A Newer Beginning

The Cannon is the University of Toronto's Engineering Society's official newspaper—created and organized by students, for students. This year has seen the birth of the Cannon's Official Mission Statement:

"To become the most respected University Engineering Newspaper in the World."

For the year 1998-1999, *The Cannon's* objective is to establish a national presence, which will be accomplished by incorporating articles from a variety of sources, covering issues and events not only at U of T, but around the world. This includes news from the world scientific community to local development news that may or may not be related to science or engineering. This also means we will develop relationships with industry as well as various communities and establish an information roadway between these parties.

Steps have been made by *The Cannon* to establish a permanent link between university engineering newspapers across Canada, by way of an article-exchange program. Out of this, we hope to forge long-lasting relationships that will encourage a more united, nation-wide engineering student society. Assisting us in this endeavour is a national engineering student magazine called *Project Magazine*. Already a well-established entity, *Project Magazine* is enthusiastic about helping us develop this project.

This year, *The Cannon* has been divided into seven distinct sections, each with their own respective news-related stories and articles. One of the most exciting sections this year is the introduction of *Professor Profiles*. Each month, one professor, who has shown outstanding achievements, be it in research, teaching, reputation, history, will be profiled in detail. Furthermore, in an attempt to deliver a more diverse newspaper to our readers, *The Cannon* will provide articles that reflect the wide variety of interests of the engineering student body—topics ranging from politics, religion and philosophy, to the arts, music and entertainment.

In a collaborative effort between the Engineering Career Office and *The Cannon*, a section called *PEY & Careers* was created. This section will provide insightful reports on issues that may interest graduating students, as well as those considering participating in the Professional Experience Year. Here, issues such as career options, working abroad and entrepreneurship will be summarised, as well as, spotlighting successful alumni and tips they may have. This section will also see interviews of students currently in or finishing *PEY*, and suggestions they may have for prospective students considering participating in the program. Finally, outstanding companies that have hired U of T students, and businesses that have contributed greatly to U of T's Engineering core, will be profiled in depth to recognise their effort and trust in us, and the Faculty. Students take pride in the achievements of their peers as well as alumni who give U of T Engineering its reputation.

Furthermore, to recognize those students who have taken on the additional challenge of being on a U of T varsity team and a full-time engineering student, the sports section has been modified to include student athlete profiles where every month, these students will be interviewed and recognized for their accomplishments and efforts.

Finally, as a paper dedicated for the needs of the student body, this year *The Cannon* has devoted a section for classified ads. In this section, students who wish to sell articles, textbooks, bikes, computers, apartment rooms or are looking to buy articles, can post their buy & sell ads here.

The Cannon is always undergoing evaluation both internally and externally, and is therefore, always under constant change. We hope that we will meet our objective and accomplish even more, and we hope you will help us in our goals with your active participation and co-operation. *The Cannon* has been growing remarkably fast these past few years and the trend continues this year. I look forward to an outstanding year.

Why Can't I Say Artsies Suck?

Gina Seto
EngSci 979

Rally, all ye righteous defenders of freedom of speech! The Dean has proclaimed that no Frosh leader shall speak or teach the phrase "artsies suck" during Orientation. My goodness, who are we supposed to hate now?

Is this clearly a case of oppression from the tight-assed administration? Or is it simply a bumbled attempt to make some well-needed changes around here? What do you think?

I can tell you the story as to why Frosh leaders are not allowed to say "artsies suck" anymore. Last year, following sexist articles inserted into the infamous Toike Oike, giant penises hanging in the atrium, a naked seductress posing as Lady Godiva on the back of the yearbook, and a letter printed in the Toike threatening to HUNT DOWN a girl who spoke up against all this, some people sat down to talk. This meeting, called by the VP External Rono Sinha in April, lasted two hours; an intense conversation between five people (three girls and two boys). I would have to say that the girls did most of the talking while the boys listened, and listened well. The issues brought up were sexist attitudes, a general unwillingness to speak up against wrongdoings, and a lack of accountability for the actions of the engineering students. Just one of the many things

discussed were the consequences of shouting something like "artsies suck" during Orientation. The disrespect that is taught from the moment you step onto engineering turf is not friendly competitiveness, but a mask for blatant prejudice. If only, we said, engineers would stop saying things like "artsies suck", then maybe we could start changing attitudes to be more sensitive and eventually build up a community of students that would support each other in the face of prejudice and persecution. The Dean himself was soon made aware of some of our ideas and promised to help make some changes.

Jumping ahead to an Orientation meeting in mid-August, Orientation Chair and VP Activities Struan Vaz informed the Frosh leaders that the Dean would not allow them to say "artsies suck" anymore. I was told by a participant at the meeting that, amidst the loud groaning that followed the announcement, Struan attempted to soften the blow with a joke. Artsies are "sensitive", explained Struan to a laughing group of to-be frosh leaders. Rather than having the effect of planting a new attitude, it seems that the proposal effectively highlighted old attitudes instead. Struan then proposed to fill in the void with newer, more creative cheers.

Unfortunately, I don't believe that the people at the meeting see this as anything more than a challenge to working around a "politically correct

obstacle". How many frosh leaders do you think will end up finding clever ways of saying artsies suck"? How many have even made the attempt to understand the underlying hate and arrogance built into those words before perhaps seeking to express it in a different manner?

Go ahead and laugh at the administration. But remember, although it was their move to force this upon you, it wasn't their idea. It was ours. And we don't care if the words "artsies suck" are not uttered during orientation because it won't matter at all if you don't have an inkling as to why you shouldn't say it. And it won't change anything if you are still screaming all of those other things that are so cool to scream and making up new ways to say the same goddamned thing. So *think* about what you are saying if you catch yourself chanting (yes, chanting) things like "artsies are dumb", or "Hey, hey that's okay, you will work for us one day". Think about being on the receiving end, without a prestigious institution to lean on for life. Think about how it reflects on you, your school, your family, your community. Think about how it fundamentally supports the brazen disrespect that can and will foster sexism, or racism - prejudice of any kind.

Please don't leave this article without at least resolving why you, as an individual, would participate in the engineering cheers.

Piece of History

Continued from page 1

In 1870 the legislature of the Province of Ontario approved the establishment of a College of Technology which was to be located near the present site of Ryerson Polytechnic University and completely separate from the University of Toronto. In February, 1871, the Legislature authorized \$50,000 for the new Provincial institution.

In 1906 the School of Practical Science became the Faculty of Applied Science and Engineering

However, on December 19, 1871, the government of Premier John Stanfield MacDonald was defeated on a vote of lack of confidence. The defeat was unrelated to engineering education. In early 1870, a young Orangeman of Ontario, Thomas Scott, after being found guilty of a serious offence by Louis Riel's court in Manitoba, had been executed. Protestant Ontario was incensed, and Premier MacDonalds was considered by many to be insufficiently upset by the event. His Roman Catholic background, his French-speaking wife from Louisiana, and his health left him vulnerable to defeat, and the opposition exploited the opportunity.

Edward Blake was invited the next day to form a ministry. In January, 1873, the new government brought forward "An Act to Establish a School of Practical Science" located at the University of Toronto but funded directly by the province. On March 29, 1873, the Act was assented to, and thus March 29, 1998 is the 125th Anniversary of the founding of the Faculty of Applied Science and Engineering.

Following Ontario's lead, all but two of the engineering faculties in Canada were associated with existing universities. The two exceptions were Ecole Polytechnique de Montreal, which was opened in 1873 and is still funded directly by the province of Quebec, and Nova Scotia Technical College, which recently became part of Dalhousie University.

After the approval of the Act, a building funded from the earlier \$50,000 authorization was commissioned. It was completed in 1878 in time to welcome John Galbraith to the post of Director and the first students to the new three-year engineering program. In 1906 the School of Practical Science became the Faculty of Applied Science and Engineering of the University of Toronto.

Sources of this presentation include a history of early engineering education at Toronto by Dean C.R. Young and biography of Edward Blake by Joseph Schull. For complete references, contact Prof. Peter Wright at (416) 978-5905 (email: pmw@civ.utoronto.ca)

This article was taken from Celebrating 125 Years of Engineering - August 1998.



President Resigns

Continued from page 1

offer.

Drago has been an active member of the Engineering Society since he was a frosh in 1995. During his three years here, he has been Chair of the

"Drago was a dedicated member of EngSoc."

- Joe McNamara

Blue and Gold Committee, Vice President of Finance, Chief Attiliator for the Cannon, and President. He was also on the engineering rugby and soccer team, and taught self-defense.

In the interim, one of the EngSoc VPs will assume Drago's duties. The next full EngSoc meeting will then

decide when to call a by-election which would elect the next President.

Drago will be leaving on September 15th, 1998.

The following is Drago's written resignation speech he gave at the August Eng Soc Council meeting

"During the last while, I have been thinking about a choice I had to make. The choice was whether to take an employment opportunity in Europe or to decline it. It was not an easy decision.

I have always looked towards EngSoc with great admiration and to be voted as the President by the student body is a great honour that I am proud to have had bestowed on me.

But all things have a tendency of coming full circle and contributions here help the student body. Now I have a chance to do that as a career and with that, as of yesterday, I accepted the job in Europe.

This will be my last official duty: to inform the CRO to call an election approximately during the end of the second week of school.

It has been truly great working with such a dedicated council and in a way knowing this has made my decision easier.

To the officers: nothing but praise and compliments for your work.

One final thing. I am offering my help during the transition stage, until the election - a kind of stand-in - if the council so wishes: to do student talks, help with the Engineering Stores and Orientation, take all the blame. I would be proud to do that - and in a way, I feel like I owe it to you all.

And now I officially resign as President of the Engineering Society. I will leave now and await your decision."

Introducing The Cannon - 1977

Berry G Levine
From: *A Century of Skill and Vigour*
"The Cannon History from Book of Skule 8T1"

In 1977, some members of the Engineering Society recognized the need for the Society to put more emphasis on the professional and technical aspects of our development as engineers. In September 1978 The Cannon was born.

Originally intended to publish every week that Toike Oike did not, The Cannon was to focus on Society news, and the educational and technical activities of the Faculty and the University. After years of controversy over the publication of Toike Oike, The Cannon was viewed as many as a welcome change. In that first year, the paper turned a few heads with interesting and well written articles on topics such as a hydrogen energy economy, solid waste management, and the achievements of the CANDU nuclear program.

The almost weekly publication

schedule became too demanding, however. Lack of original material was compensated for by reprints from other publications, and the paper's layout often lacked polish. Nonetheless, it was an idea whose time had come.

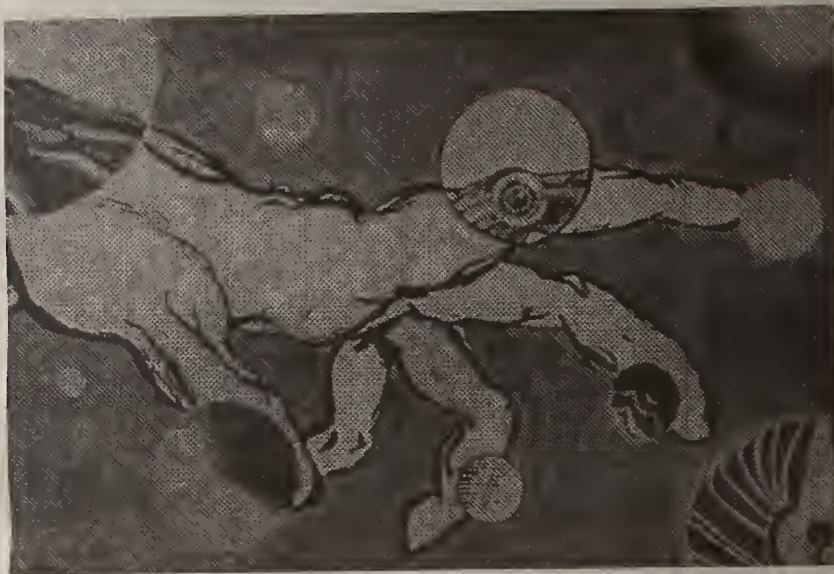
In the 1979-80 school year, the publication schedule became approximately monthly. The look of The Cannon became more professional, and its scope somewhat broader, although original material was still difficult to find and reprints were a mainstay in the technical pages.

This year, (1980-81), the effort has been to improve the profile of The Cannon. It was hoped that by gaining recognition and acceptance, the paper would also gain increased staff and contributions. The Cannon is mailed to every student Engineering Society in the country and to a number of alumni. The Faculty's High School Liaison office sends copies of every issue to Ontario high schools to aid in spreading the word about engineering at Toronto. The paper is now distributed on campus beyond the engineering community.

A regular monthly publication schedule is met, and all the material this year has been original. Society news, such as the incorporation proceedings, athletic achievements, and committee activities, has received regular publicity. Technical articles, written by students and staff, have touched on everything from a new sewage treatment facility to the scientific importance of the Old Observatory building.

Advertisers, though not sought, have become interested, and the financial picture is bright. The largest problem remains to be staffing. Editors have traditionally depended heavily on friends for assistance because other help is not forthcoming. Since people who are friends are often classmates, this produces an unhealthy bias towards a specific discipline. Those who enjoy The Cannon must realize their responsibility to contribute some time and effort to ensure its continued existence. The world is not demanding, unless left to one or two people, and it holds many rewards...

Martin's Corner...



Vitruvian Man

Martin Jakubik
Computer Science - Waterloo

It wasn't his idea. Or was it? It certainly wasn't anybody's in the classroom. Certainly not anybody's from campus administration. And certainly no project of the school beautification committee, which elects to paint grey walls in mixture of yellow and beige rather than a striking mural on the classroom wall.

But Bill Lee, undergrad student navigating his way through systems design engineering at the University of Waterloo, maintains he doesn't know where he got the idea. He gives the credit for inspiration to a classmate.

Clinton, (a name which, in demonstration of his enigmatic presence in the systems design hallways, is not real) said one day to Bill, "Let's paint a mural on the back wall." The weekend was coming, and, barring textbook loads of D.E.'s and bridge-building, there was a bit of time for a renaissance. Bill and Clinton's new project would be the second in the Systems' tradition of appropriating exciting engineering formulas like $F = ma$ into works inspired by 16th century masterpieces. The two got down to work on a Friday night, intending to paint the weekend away.

Clinton, upon completing the sanding job necessary to prime the work surface, left the room and, in character, was not heard from until the next week. Puzzled Bill went on to complete the job himself, depicting an enormous hand in a pose drawn from Michaelangelo's Creation. Composed about the palm floated diagrams depicting, in patriotic engineering fashion, stresses upon the joints and models of alternative materials.

The Hand Bill painted was blue, and reached thumb-sideways and open from the left of the two-square-

metre surface. Its fingers were grotesquely askew, yet its first digit still seemed inches away from touching the hand of Michaelangelo's Creator. And in their strained poses, the fingers were accompanied by models of joints in wood and metal, with appropriate calculations.

Monday morning, the composition met the sleepy students and professor in a striking greeting. Since then, the artist hasn't been overly public about his identity, although neither does he hide it. However, Bill could never say, in the methodical way one might derive an integral identity, where the idea came from. Perhaps from Clinton's first words, the image was formed in Bill's head, and Clinton's presence or absence would have done little to alter the painting's subtext.

And that is the mystery. Where does art come from if it can somehow be inspired by a blank wall and a

Where does art come from if it can somehow be inspired by a blank wall...

professor spewing formula after formula? Waterloo is a university building its reputation on a lack of art. Its engineering students are discouraged from taking studio courses, its excellent dance program was demolished several years ago, and its arts faculty, although its largest, is ignored. Yet, despite the high-tech dogma, students continue to crave for the humane.

Clinton was clearly an aficionado for something brighter than yellow/beige paint, and his name is as remembered with the creation of the work as is Bill's. And that leads to the other reason for the sentiment about the fate of the Systems Man: in the words of Carol Kendrick, administrator of the systems design program, "all were upset by the painting's disappearance."

When painted in two-square-metre enormity directly onto fundament, no culprit other than the old beige-and-yellow could lift such a picture from its moorings. It was in the summer of 1997 that the campus administration decided to coat the artwork in a film more appropriate to the subject of the lectures. Among the victims, the Systems Man also disappeared. That work, of an earlier and even less known authorship, straddled adjacent classrooms, depicting both the front of Da Vinci's Vitruvian Man, as well as a perfect back, precisely positioned in the other room behind the first. Stress diagrams and formulae accompanied the painting as well. The shame of its disappearance, along with Bill and Clinton's Hand, shocked many students who had entered school younger than the paintings, and had become used to their familiarity.

Can the dull buildings of scientific and practical training really keep out art just by painting over it? Somebody photographed the paintings before they were destroyed, and their likeness lies somewhere in a dusty archive. A two inch miniature of Bill and Clinton's work shares an ironic place on a banner in Carl Pollock Hall as a "representation of engineering life" at Waterloo.

But nowadays, Bill himself is not upset about it. He is a sketcher, a drawer, and he will paint again. Others have said that it is like him to burst out with some idea for no reason whatsoever, and perhaps that is a good illustration of how art works. Despite the fact that the dull beige-and-yellow engineered the artwork's destruction, it is a good sign that no matter how many formulae and proofs and laws can be repeated tonelessly in an uninspiring room, art can take it instantly in an iron grip.

An invitation to join CUBE

Mark Ebdon
EngSciOTO

Interested in "biomedical Engineering", or "bioengineering"? Our goal is to provide you with information which you may not have time to find for yourself.

Why wait until graduate school to find out if this is the field for you? Our club provides a variety of services for students. These include:- Job postings from professors and academic organizations- Social networking events such as

- the annual 'Wine and Cheese'
- Information about graduate study programs
- Speakers (for example, the Corporate Lecture Series)
- Tours of hospitals and industry

Membership for 1997-8 was approximately 120, and included engineers from nearly every single discipline (NOT just biomedical engineers!). To join, send us your telephone number, academic program (e.g. Industrial Engineering, OT2) by email (the address is cube@ecf.toronto.edu). You will be automatically added to our e-mail list, and get updates on (a) what CUBE is doing and (b) what is happening in Toronto.

All of our meetings and many of our events have FREE FOOD AND DRINK.

Some extra info about the club: we have an executive of two co-presidents and six vice presidents. Our faculty advisor is Professor Berj Bardakjian, who researches bioelectricity and more at the IBBME. Have you checked out the IBBME (Institute for Biomaterials and Biomedical Engineering) yet? Let us know if we can help!

If you have any questions please do not hesitate to contact us before or during the school year. We look forward to hearing from you.

Past events:

September 1997

- introductory meeting
- first speaker: Hans Kunov, Director of the IBME

October 1997

- first tours: the Hospital for Sick Children's Medical Engineering Unit

November 1997

- second speaker: Bill Gregg and Judy Irvine from U of T Medical School
- Admissions: "Can Engineers Go to Medical School?"
- third speaker: Ka Wai Tam, an engineer in Medical School
- second tours: the operating rooms of HSC

February 1998

- Wine and Cheese Reception (about 150 people)
- MCAT Simulation

March 1998

- third tour: the Bloorview MacMillan

Skule Nite

Raymond Fingas
EngSci 0T1

Now that it is September and Skule Nite is in full swing, it is time to think about things to help relieve the stress of it all. You can't start too early, right? The best thing to do here at UofT is Skule Nite, Eng Soc's very own musical-comedy revue. Skule Nite is the only theatre production in Canada put up by engineering students, and the effort and skill put into it really shows. Each month, this column will bring you the latest news, the best rumours and the most important information about Skule Nite. You should also visit the Skule Nite web site (skulenite.skule.ca) regularly to get all this information, plus tons of other great stuff that we have planned.

Skule Nite starts the year with a bang! In addition to thrilling the new Frosh with a small glimpse of what the show will be like, Skule Nite was well represented by the catapult team, wreaking havoc on Frosh and artsies. Wondering what hit you? Well, here it is!

IEEE GETS PROFESSIONAL

Marcus Lam
ELEC 0T1

The IEEE (Institute of Electrical and Electronics Engineers), the largest professional organization in the world, consists of over 320,000 members in over 150 countries. Its network of students and professionals keeps engineers, technicians and researchers around the world informed of the latest technological developments through conferences and published literature.

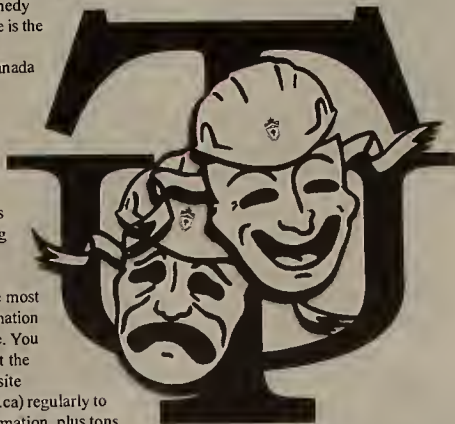
Where do you come in? The IEEE Student Branch is a full extension of this society. We organize workshops, lectures and conferences to raise professional awareness among our student members. Last year, numerous companies, such as IBM, Nortel, Hewlett Packard, Bell Mobility, and Bombardier Aerospace, attended IEEE events to talk to potential engineering graduates from U of T.

This year, we're making it even easier to get a membership. You can pick up an application form at our office in SFB580 or simply go to <http://www.ecf.utoronto.ca/~ieec> and fill one out online. Our website has been completely re-designed; make sure to periodically visit this site for the latest club information. Also new is our bimonthly newsletter entitled IEEE Currents.

In keeping with our theme "Get Professional", two events are already

Check out these exclusive Skule Nite catapult blueprints. Originally, the catapult appeared in Skule Nite 9T7, where it was used to launch a boulder, shattering the jail holding Figaro and Brunhilde so they could escape. Go ahead and build one of your own.

And if you do, come out to crew



sessions, we need your help. Come out to auditions as well. Auditions and crew sign-ups will be on October 1, 2, 5, 6 and 7; location TBA. Check out our posters for more info as the dates draw near, or send email to skulenite@skule.ca for further details.

Come to Skule Nite and have fun.
Who beats that? NOOOBODY!

planned for the fall. On Thursday, September 24th, 1998, our annual Wine & Cheese is being held from 5-7pm at room GB202. Our featured guest will be Mr. Joe Hanson from Altera Corporation, who provided IEEE with Altera Board Design Lab Packages, available for sale to its members. All professors from ECE and Engineering Science will also be invited. Admission is free for all IEEE members and \$7 for non-members.

Secondly, our Career Growth Dinner will be held on Thursday, October 8th, 1998 from 6-9pm at the Faculty Club. Representatives from Nortel, IBM, Allied Signal, Bombardier Aerospace and others will be attending to speak to engineering students in a formal dinner atmosphere. Their speech topics will range from technological innovations to career opportunities. Tickets for the Career Growth Dinner will go on sale in mid September.

In order to take advantage of these events, you are strongly encouraged to become an IEEE student member, especially if you are an Elec, Comp or EngSci. Your membership also entitles you to receive free subscriptions to two IEEE periodicals (Potentials and Spectrum) and the use of IEEE computers. This is your chance to get professional. Drop by our office or our website to become a member today. You can also email the student branch at ieec@ecf.utoronto.ca for more information.

High School Liaison Committee

Jean Cruz
EngSci 0T0

The thing to do
In any campaign
Is to buy some thumbtacks and
A map of the terrain.

(And why on earth
Does this write-up rhyme?
I thought, why not?
I have all this time...)

High school to high school,
Posters in hand.
We'll tell them we rock.
We'll say that Skule's grand.

We'll tell them the difference
'Tween CompEng and CompSci.
We'll tell them that Systems'
really Indy (ooh, dry).

And of course PEY!
We'll smile and we'll say
How 12 to 16
Beats 4 any day!

We'll help start a club -
with an eng. slant. Surely,
Some wanna start learning
All OF this crap early.

With every new school we
Visit and win, we'll
Change the tack on it from
Burgundy TO teal.

First U of T, Frosh-for-a-
and then Skule Daze too:
We'll need help from people,
We'll need help from YOU.

The ugly truth surfaces,
The masterplan fails.
The thumbtacks stay burgundy
If volunteers bail.

So email me soon
We'll discuss nitty gritty,
We'll turn metro Teal!
High School Liaison Committee.

CUBE cont'd

Rehabilitation Centre

- Niche Job Search launched
- Hospital Ambassadors selected

April 1998

- expansion into other universities

May 1998

- 1998/99 Executive appointed

June 1998

- members receive special invitations to the IBBME dinner during Visiting Professor Week

CUBE's FIRST TERM EVENTS

- September:
15 - First Members' Meeting, 5 p.m.
26 - The CUBE Saturday Retreat

October:

- First week - visit to Eli Lilly Canada
- 10-12 - BMES Annual Fall Meeting in Cleveland
- 15 - Members' Meeting

November:

- 4 - Can Engineers Go to Medical School? Part 1
- 5 - Can Engineers Go to Medical School? Part 2
- 10 - Biomedical Engineering Wine and Cheese Reception
- 12 - Second Members' Meeting

This itinerary does not include speakers (for example, the Corporate Lecture Series) and tours (of hospitals and industries) created with just a few weeks notice. Watch the website for developments.

SkuleDaze 9T8

Tamara Ho
EngSci 0T0

Feel the Force,
Live the Moment,
Find your Potential...

...at the University of
Toronto, Faculty of Applied
Science and Engineering.

This was the theme for SkuleDaze9T8. The 130 high school students (a.k.a. proto-frosh) from across Ontario may have done exactly that during the weekend of May 23-24, 1998. They were able to experience a weekend as a U of T engineering undergraduate and get a glimpse into what would be expected in the near future.

The proto-frosh arrived early Saturday morning at New College and checked into their room. What was to follow was a weekend filled with...undergraduate engineers and their skule spirit, ice breakers, student life seminar, departmental seminars, a tour around U of T campus, a bridge of cards design competition, movies,



basketball and swimming at the Athletic Center, dancing till midnight in the atrium, staying overnight in New College, PEY seminar, games at Queen's park, LGMB, awesome food, snacks, sunshine :D ...

Shirle Ho (SkuleDaze9T8 Chair) and Tamara Ho (SkuleDaze9T8 Vice-Chair) would like to take this opportunity to thank Deirdre Stanton, Professor Cluett, the SkuleDaze9T8 executives, leaders, and helpers, the professors, the photographers, and the LGMB for making this year's SkuleDaze another tremendous success. Feel free to contact either Shirle (hoshirl@ecf) or Tamara (hotamara@ecf) for any questions.

Apply early!

News External

Deregulation for Doubling

Tuition Deregulation for all programs if ECE Enrollment Doubled

KAREN IRK
ELEC 9T9

Deregulation of undergraduate engineering programs has been a topic of discussion of late. This is largely because of the recent deregulation of other professional faculties in Ontario. At the end of May the provincial government put forth a proposal to all universities detailing that any university can deregulate engineering tuition for all programs, provided they double the enrollment for their Electrical and Computer Engineering and Computer Science programs. The same arrangement is proposed for colleges provided they increase their enrollment by 50%. In addition, the government has set aside \$150 million to assist with the cost of doubling these programs.

The provision of doubling ECE

Facts about Deregulation and Doubling ECE

- The government will allow universities to deregulate tuition if they double the number of ECE and Comp. Sci students they had in 1995-96 by 2000-01
- To participate, universities have to increase this years enrollment of ECE by 20%
- UoFT will have a 20% increase this September and has assembled a Working Group to make recommendations whether or not to double
- The government has set aside \$150 million for one time costs and an annual subsidy of \$5000 for each additional student
- If UoFT decides to participate, tuition for all engineering programs will be deregulated

students was introduced after the government came under fire from big companies like Nortel over the fact that "the demand for graduates holding degrees in critical disciplines cannot be met by the universities' current supply of graduates." Nortel has been very vocal about the shortage in technological workers, and that this shortage affects its ability to compete globally.

Minister of Education and Training Dave Johnson says "companies in the high tech sector are creating jobs more quickly than Ontario universities and colleges can educate people to fill them." In a news release on May 29th, the government stated that in response, the government will provide one time expansion funding and beginning in 1998/1999 "introduce a new annual provincial grant" of \$5000 for each additional engineering student, \$3500 for additional students in computer science and \$2000 for each new college student.

The government is also challenging industry to match the funds they provide and commit to offering summer, coop and permanent jobs to students. There is no guarantee that industry will commit funds and universities must solicit these funds individually. For the government to match funds, all donations must be received by April 15th 1999.

In order to be eligible for the funding and the ability to deregulate, universities must meet two criteria. The first is to increase the enrollment of ECE programs by 20% this September, and the second is to agree to double the enrollment in the same programs by November 16th. The eventual objective is to double the 1995-96 entry-level enrollment by 2000-01.

UoFT will have already met the first criteria through an increase in acceptances but has not yet agreed to

the second. A working group comprised of professors and students has been set up to examine the feasibility of doubling and the cost of doing so. A report should be released shortly with the recommendations of the committee. Among the considerations is cost of additional faculty, cost of additional lab and lecture space, quality of students and effect on other engineering disciplines at UoFT.

Many other universities will be doubling including McMaster, Carleton and Western. The notable exception is Waterloo, whose present stance is that they are not capable of doubling their Electrical and Computer Departments. McMaster has recently introduced a new Software Engineering Program and were therefore drastically increasing enrollment in any event.

A memo was released to the heads of universities outlining the details of the proposal. Under "Tuition" it states:

"Participating universities will be permitted the flexibility to set tuition fees in eligible programs, pursuant to the conditions and implementation provisions associated with tuition fee increases in 1998-99 and 1999-00 (e.g., grandparenting of students enrolled in 1997-98, provision for 30% student aid set-aside, public accountability reports, and student assistance requirements)."

This would mean that the university would be able to set tuition for all engineering programs with the mentioned provisions. This would apply to all programs and not just Electrical and Computer Engineering.

ESSCO (Engineering Society Student Councils of Ontario) has also set up a task force to look at the issue and come up with recommendations and a stance on the issue. At present the main problem is the separating the issues of deregulation and the doubling of enrollment of students enrolled in

Perceiving Amiability

Beth Adams
Jay's Brain - exn.ca

Are our brains busy warning us to be wary of people who look sinister and suspicious? According to recent research, a part of the brain called the amygdala may actually help us make judgements about people's approachability or trustworthiness just by reading their faces.

There are two parts to the amygdala, one on each side of the brain. People with damage to this part of the brain are unable to recognize fearful facial expressions. They can, however, recognize facial expressions of happiness, sadness, and surprise.

These findings suggest that the amygdala plays a crucial role helping us to recognize fear. What if someone has a particularly nasty facial expression? Can the amygdala warn us to be fearful of people who look threatening? The answer may be yes. There is new evidence linking the amygdala to such social judgements.

In a recent study, subjects with damaged amygdalas were shown pictures of people's faces and were asked to judge whether the people looked approachable and trustworthy.

For approachability, subjects were asked to imagine meeting the person on the street, and to indicate how much they would want to walk up to the person and strike up a conversation. For trustworthiness, subjects were asked to imagine trusting that person with all their money or their life.

Although normal subjects could easily identify individuals who looked unapproachable or trustworthy, subjects with bilateral amygdala damage had a lot of trouble picking out faces that looked unapproachable or threatening.

In general, they judged most people as looking pretty approachable and trustworthy even when they looked very threatening to normal subjects. These findings suggest that the amygdala may provide us with important social information about other people.

We know that people with bilateral amygdala damage have an impaired ability to visually recognize fear or potentially fearful situations—but can they hear fear? Can they detect fearful or angry emotions in a voice? To date, only one case study has investigated this question. Even though the subject had normal hearing, she could not recognize fear or anger in a voice!

This suggests that the amygdala's role in the perception of fear isn't just limited to visual expressions of fear. So people with bilateral amygdala damage can't see fear or hear fear, but can they feel fear themselves? This question will probably never be studied scientifically (it just isn't ethical to intentionally try to scare people in a laboratory experiment). There is some anecdotal evidence, however, suggesting that people with

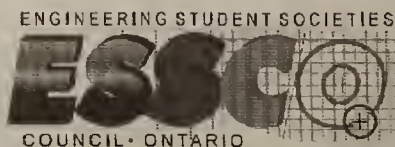
ESSCO: The Engineering Students Societies Council of Ontario

Shoshanna Mensher
ESSCO President

Well, this is a daunting task that has been set before me, and I'm sure it is one you can all relate to. I started this thinking it would be fairly easy to set down here words describing something I am so familiar with, but it seems I am having trouble with that all-encompassing opening line.

"Thank gravy she's not an English major" you say? I agree wholeheartedly. Because if I were an English major, aside from the fact that I would have no job when I graduated, I would not have this opportunity to welcome you to (or back to?) the wonderful world of being an engineering student and to tell you about ESSCO. Now, you may disagree

with me on my choice of the adjective 'wonderful,' you might instead use something like "grueling." But you'd never be able to tell me so unless I introduce myself and seeing as how you're still here, this is probably a good



time to do so. My name is Shoshanna Mensher and this year I am the president of ESSCO. This is probably about the time you are asking yourself, "What is ESSCO anyway and why should I care?" Well let me tell you. ESSCO is a provincial organization of

engineering students from all thirteen Ontario universities. It is an umbrella for the individual engineering societies, under which their resources can be pooled and our general concerns addressed. It is a way for us, as

engineering students, to meet, compete and become friends with students at other universities. It is an open forum where we can discuss issues that affect us and make the changes to our education that we feel are necessary. It is where you can learn how other schools handle activities and subjects that directly influence your life in engineering (such as Orientation, Course Curriculum, National Engineering Week, Women in Engineering, APEO membership and

See What Is ESSCO - page 8

See Your Amygdala - page 7

Your Amygdala Can Tell

Continued from page 6

bilateral amygdala damage may have some level of understanding of the concept of fear. For example, one subject could describe types of situations that would normally evoke fear (e.g. being alone in a dark alley at night) as well as how frightened people should behave (e.g. they may scream or try to run away).

But their understanding of fear was limited—when asked to draw a picture of a frightened person, the subject claimed that she had no idea what fear looked like!

Are we born with the ability to respond to fear or is our knowledge of fear acquired through experience? Studies investigating how human infants respond to facial expressions may provide us with some insight into

this question.

For example, six-month old infants react more negatively (e.g. crying and frowning) to facial

expressions like fear and anger than to happy and neutral expressions. Do infants react to fear expressions at such a young age because their brains are programmed at birth to respond to fear? This wouldn't be too surprising—fear is a socially contagious emotion.

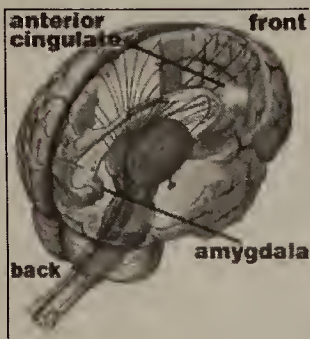
Displays of fear and anger often signal to others that there is a potential threat in the environment. A more likely

explanation, however, is that fear perception is probably due to a combination of both genetic and

environmental factors—like most other human behaviours.

What can we learn from this research? It is clear that the amygdala plays a role in how we perceive and process emotions, particularly fear. In some potentially dangerous situations, our amygdala may send us signals to warn us to

proceed with caution. So the next time someone gives you "the evil eye" and you shudder with fear you can take comfort in the fact that your amygdala is probably in good working order.



Disabled Technologies

If you produce anything online, you're probably ignorant about disabled people. Sound harsh? Well, it is. And odds are it's true. If your browser doesn't support frames, then we don't support you. Go to Netscape or Microsoft and get a better browser.

Jeff Haas
exn.ca

As new technologies emerge and Internet professionals have more cool toys to play with, we make assumptions about how people are surfing the web. It's our job and our lifestyle to try and stay on the bleeding edge. And although everyone wants to build a hotwired, we reluctantly accept that most people don't have the latest software or access to broadband. Compromises usually take place when we choose between supporting old browsers and delivering buzzword-laden web sites. But upon what information are we making our decisions? Published statistics are difficult to believe, so we rely on log files to see who's coming to visit.

While enjoying our morning coffee delivered from a nice and slow intravenous drip, we make what seems

activities.

The irony is deafening.

In a cyberworld where everyone is supposed to be equal and anonymous, handicaps should be irrelevant. And they are... until we ruin the party and insist on only a high-tech version of a site. When alternate text descriptions for images and a text-based navigation page are so easy to create and we don't create them, we come across as prejudiced against disabled people.

This only becomes an issue when we realize our designs are inaccessible. Most developers don't consider the needs of blind internet users because the demographic is something we know nothing about. With a show of hands, how many of you have even heard of a braille display or text-to-speech web browsers? Look around; you're not alone.

TeleSensory's PowerBraille 80 instantly transforms screen information into 8-dot refreshable braille

A braille display is slightly larger than an average keyboard. By touching their fingers to it, visually impaired users read the text that would normally appear on a computer monitor. It converts ASCII screen characters to braille by raising pins mechanically, forming words as they appear on screen. Displays such as TeleSensory's PowerBraille convert less than half a horizontal line at a time and refresh automatically.

A screen reader works differently. Using an alternative browser (like PWWebSpeak or J-Bliss) in conjunction with text-to-speech software, web pages are converted into audible, synthesized speech.

In both cases, images disappear. All the graphics are replaced by their ALTernate descriptions, if they exist, and an indication of whether or not they have a hyperlink.

It's enough to humble even the greatest HTML grinders.

But don't give up hope. Although Content will always be King, design

still matters. University of Toronto accessibility researcher Dena Shumila says, "it is good design and correct use of html that makes a page accessible. It does matter what the pages look like, because like it or not we are part of a visually based world and advertising, promotion... are all visual in nature in terms of drawing attention. The important thing is that you can still have a cool looking site that is accessible."

To understand what inaccessibility means, either download PWWebSpeak or close your eyes and have someone read a website to you. Remember that all text is read horizontally (in most cases ACROSS frames) and the only description of a java applet or an image is the ALT tag. No ALT tags? Too bad.

There are fundamental problems with the majority of web design today. Fortunately, adding accessibility isn't difficult.

Michaelangelo wouldn't have designed an inaccessible web site.

Before we get into the thick of things, remember that these problems aren't due to ignorance on the part of today's designers. The Internet was brought into existence as a post-apocalypse communications system the United States could use to rebuild itself if the cold war got really hot and went nuclear. ARPA scientists and US military engineers never considered usability issues, cross-browser compatibility or how a screen reader would view a page.

Communicators have to learn how to design with everyone in mind. A web site can have high-definition, cutting edge technology, but it should degrade gracefully so visually impaired people

can enjoy the content too.

These are issues that matter today! Now that the Internet has become a ubiquitous medium for communications, communicators are the ones who must make sure their message is being delivered to as large an audience as possible.

So how do you make your web site accessible for the visually impaired?

Two easy things you can do include using ALTernative descriptions and keeping an up-to-date text-only version of your main navigation page. They're easy to implement and increase accessibility dramatically. Use ALTernate text descriptions for all images, applets, objects and client-side image maps.

For more information on making your site accessible, read the W3C's Web Accessibility Initiative (WAI) Guidelines. They were developed by a team of accessibility researchers from

Although Content will always be King, design still matters.

around the world, including members of The University of Toronto's Adaptive Technology Resource Centre (ATRC).

Kevin Nguyen, Access Systems Developer at the ATRC, says the WAI's first priority was coming up with a set of standards (as outlined in the guidelines). They then approached mainstream software developers and asked them to build accessibility functions into their commercial web editing software. "Sofquad's HotMetal Pro was the first one to come on board," he says. "Now it looks like other mainstream programs will also implement forms of accessibility prompting for people building web sites. We're very pleased with this."

The WAI guidelines include a recommendation for widespread implementation of Cascading Style Sheets (CSS). CSS allows designers and users to have better control over web page formatting, style and design. By using Logical Styles (for bold and for emphasis/italics) instead of Physical Styles (<bold> and <I>), designers can specify how they want their pages to look and disabled people can turn the CSS off to view a text-only version. Instant accessibility will be achieved and everybody online will be able to configure their browsers independently. Also worth noting is that low-vision users who surf with special browsers (i.e. configured to display 10-point fonts as 46-point fonts) will be able to define their own settings.

CSS will satiate designers by delivering the much-promised utopian vision: a tool that allows a complicated, high-definition site to degrade gracefully in any older browser that might be viewing it.

The future looks brighter for visually impaired surfers and changes can already be seen on the horizon.

The much-hyped Opera browser has low vision and high contrast displays, while Microsoft IE 4+ already incorporates disability options into its preferences menu.

Daniel Puskaric, a Technical

See Accessibility - page 8

Making the Internet accessible depends on us. Still push edges, but remember the audience.

like an informed conclusion: the 0.06 per cent of visitors surfing with an archaic browser like Lynx should upgrade or get offline.

And that's where most of us are guilty of creating a World Wide Wall that stops disabled people as effectively as a kick in the bauds. Technological elitism has a human cost that transcends the non-support issue. By making most web sites physically inaccessible to disabled people, we are demoting them to second-class netizens who are excluded from participating in normal online social

Accessibility On The Net

Continued from page 7

Researcher at the Canadian National Institute for the Blind, says that several companies are making specialized browsers for disabled people. "There are lots of screen readers out there, but JAWS and Winvision97 are the best. Recently, they've all been getting better, but none are at the point where they can overcome inaccessible design."

Making the Internet accessible depends on us. Still push edges, but remember the audience. Even if we're narrowcasting, there might be one person with Lynx who's curious about what we have to say. Ensure access by using common sense and testing sites in browsers that aren't Netscape or IE. Also flip your mouse over and see if you can navigate your site with just your keyboard.

A month ago, I thought blind people online was preposterous. Now, not only do I know better, but enx.ca has a secondary, text-based navigation system that allows visually impaired people to access most of our content. The gracious responses we've already received made the 3 hours' work very rewarding. When was the last time you helped a blind person see?

To check your knowledge of disability issues online, take the Public Service Commission of Canada's Web Page Accessibility Self-Evaluation Test.

Getting online isn't easy if you're disabled, because most web developers don't even know you can access the web. Michaelangelo wouldn't have designed an inaccessible web site.

Design Exchange Calendar of Events – Fall 1998

A DX Newsletter

Exhibitions:

To October 4, 1998

Shifting Gears: In Pursuit of a Greener City

This exhibition focuses on the reduction of CO2 emissions as it relates to transportation and the urban landscape. Shifting Gears explores two strategies – how to improve and green out means of transportation and how to reduce our need to travel through the re-design of our cities. Shifting Gears not only showcases internationally relevant solutions but it also explores design solutions as they could apply in the new City of Toronto. The Design Exchange has involved local environmental organizations, business and design professionals in order to visualize how local design solutions could impact on Toronto – assuming these strategies were implemented. Shifting Gears uses the City of Toronto as a prototype for environmental solutions that can be applied in cities around the world. Exhibition Hall.

September 8 to

October 4, 1998

Nienkämper

Nienkämper has always believed that exceptional furniture design and the finest European leathers bring out the best in each other. Three decades ago, Nienkämper's use of luxurious, imported leathers played a major role in establishing their reputation for excellence. Today, these distinctive leathers still lend their beauty to Nienkämper designs. This exhibition is a celebration of 30 years of design excellence from Nienkämper. Chalmers Design Centre. Free.

Lectures

International Design Lecture Series

All lectures – Trading Floor, 7:30 pm. DX Member, students and seniors \$12 each or \$30 for the series of three. Non-members \$16 each or \$40 for the series of three. Special prices apply for participating organizations. Please call (416) 216-2160 for information.

September 24, 1998

Witold Rybczynski

Visions for the City: Lessons in City Building from Fredrick Law Olmstead

Fredrick Law Olmstead is probably best remembered as the designer of Central Park and Mount Royal but

Witold Rybczynski wants you to understand Olmstead's legacy as the father of "North American Urbanism" whose ideas and approach to town planning have made a lasting impression on the fabric of North American cities. Witold Rybczynski is a graduate of and former lecturer at McGill University in Montreal and is currently the Meyerson Professor of Urbanism at the University of Pennsylvania. Rybczynski is the author of many best selling books, including "City Life: Urban Expectations in a New World". Sponsored by the Canadian Urban Institute and Partners in Urban Forum.

October 7, 1998

Alessandro Mendini

Alessandro Mendini is one of the bourgeois radicals of Italian design and is politically and intellectually oriented. He was born in Milan, and until 1970 worked as an architect for Marcello Nizzoli. From 1970 to 1976, he was editor of Casabella and in 1979 became the editor of *Modo e Domus*. Mendini was co-founder of Studio Alchymia (with Alessandro and Adriana Guerriero). One of the movements he generated was "Banal Design", which was centred around a rediscovery of decoration. Mendini also designed silverware for Alessi. Sponsored by the Italian Trade Commission.

What Is ESSCO?

Continued from page 6

open forum where we can discuss issues that affect us and make the changes to our education that we feel are necessary. It is where you can learn how other schools handle activities and subjects that directly influence your life in engineering (such as Orientation, Course Curriculum, National Engineering Week, Women in Engineering, APEO membership and information, Etc.) and take those ideas back to your school. It provides for conferences and competitions where you can learn, play and excel (such as the PEO conference, OEC & ESSCOlympics). Now doesn't that just clear things up?

"But how do I find out more on ESSCO, ESSCO activities, other universities & get involved in these things?"

That's the easy part. First, you could ask your engineering society about all the conferences and competitions that are offered, that you can attend or help organize. Second, you could subscribe to the ESSCO Link, which is an e-mail based communication tool where letters written to it will be forwarded to everyone who is subscribed. It is used to discuss any issues that an engineering student might be

concerned about, and trust me when I say that everyone has an opinion and is willing to share it here. To subscribe to the Link – send an e-mail to esscol@mercury.cc.utorawa.ca with the line 'SUB ESSCO-L' in the body, leaving the subject line blank. Make sure you do this from the account you want to receive responses to and don't be afraid to jump in to the conversation headfirst. Third, you could visit the ESSCO website at www.essco.on.ca where there is a plethora of information on upcoming conferences, competitions, and social events. You can find information here also on other universities and projects the ESSCO executive is working on. Last, but certainly not least, you can talk to the ESSCO executive. That's why we're here, right? Any questions or comments can be e-mailed to us any time. Our e-mail addresses can be found in the ESSCO website at: www.essco.on.ca/essco_executive.html. But please, feel free to come up to anyone of us when you get the chance and talk to us directly.

Well, I think that pretty much covers things. Keep an eye out for articles from ESSCO and conference and competition announcements in your EngSoc's publications. Remember, there is more to your education than just classes and homework but if you don't get involved you'll miss out on all the fun.

Welcome to our humble brood and good luck!

Engineering Students of the 21st Century

Project Magazine

Are we getting what we need from our education?

The CEAB (Canadian Engineering Accreditation Board) has presented us a list of traits they feel are required of Engineering students upon graduation for accreditation purposes. The following list was presented at the CCES'98:

As a consequence, the engineering graduate of the 21st century, upon graduation, will require the following:

- good knowledge of mathematics, science, and technical fundamentals;
- engineering concepts of design principles relevant to the chosen and related disciplines; as well as, knowledge in some depth in at least one technical speciality.

- well developed learning skills.
- good communication,
- interpersonal and teamwork skills.
- ability to deal with open-ended multi-disciplinary problems.
- understanding of the principles and responsibilities of leadership.
- exposure to the design and implementation requirements of integrated inter-disciplinary projects.
- basic knowledge of principles of project, human resource and time

management.

- understanding of the requirement to maintain continued competence and to keep abreast of up-to-date tools, techniques, and practices including advances in information and computer technology.

- exposure to concepts of ethical practice, responsibility and accountability.

- exposure to the issues of social and environmental responsibility as related to the practice of engineering.

- exposure to the concepts of change and change management.
- exposure to the issues of cultural and business practice differences and their impacts on professional engineering practice.

The nature of the feedback given by the students during the workshop generally fell into three categories:

1. The need for more information on how these ideals would be

implemented since the list doesn't really tell us much in terms of how it will affect the courses.

2. It would be more beneficial to

See Piece of History - page 16

PEY & CAREERS

Career Services for U of T's Engineering Students

Seema Opal
Engineering Careers Officer

The engineering employment market is booming! There are many exciting, challenging and fulfilling employment opportunities available to you. In order to ensure that you are fully aware of the opportunities that exist, the Engineering Society and the Career Centre initiated the Engineering Career Office. At the Engineering Career Office we are responsible for informing potential employers of the benefits of recruiting U of T engineering students and making you aware of the many employment listings at the Career Centre. We offer many seminars, workshops and company information sessions to help you make the right career decisions.

Please take advantage of the many excellent career services and resources available to you. We will help you prepare for the employment search process and give you the tools necessary to make informed career choices. We're in your corner!

Some of the valuable services offered at the Career Centre:

- Career Centre Online: www.careers.utoronto.ca
- Hundreds and hundreds of engineering employment listings
- Workshops and seminars to help you implement an effective work search plan
- A resume clinic to help you prepare the most effective resume and cover letter
- Career counsellors to help you determine a challenging and rewarding career path
- Job shadowing opportunities through the Extern Program
- The largest Career Resource Library in North America
- The specialized services offered at the Engineering Career Office:
- Active marketing to potential engineering employers
- An online resume database only accessible to select employers: <http://career.skule.ca>
- An Alumni Mentorship Program which connects you with enthusiastic graduates
- A series of professional development seminars just for engineers
- Fax and computer facilities

Have any questions? Please contact us. We look forward to hearing from you!

Engineering Career Office
Room B760, Sandford Fleming Building
10 King's College Road
Phone: 416-946-3730
Email: career@ecf.utoronto.ca
Website: <http://career.skule.ca>

Career Centre
Koffler Student Service Centre:
214 College Street
Phone: 416-978-8000
Website: www.careers.utoronto.ca

First Year Review and Goals: 1998-1999

Through the efforts of Professor Michael Charles, Dean of the Faculty of Applied Science and Engineering, and the Office of the Provost, the University of Toronto has matched the student funding of the Engineering Career Office at \$0.50 to the dollar. The following is a brief history of the Career Office and goals for the 1998-1999 academic year.

History

In March 1997, undergraduate engineering students voted in favour of creating and fully funding a Career Office to be located within the Faculty of Applied Science and Engineering. Each engineering student committed \$25 dollars a year for the 1997-1998 and 1998-1999 academic years in order to support the external and internal marketing duties of a Career Officer. The Engineering Career Officer is responsible for increasing the number of summer and full-time engineering employment opportunities advertised at U of T, and actively marketing existing career services provided by the U of T Career Centre.

Since October 1997...

In October 1997, a Career Officer was hired to create the Engineering Career Office. In the following nine months the following programs and services were initiated:

External marketing to potential engineering employers: Over 1000 potential employers have received marketing package informing them of the benefits of recruiting U of T engineering students. Since the Career Officer is responsible for contacting companies that have never recruited at University of Toronto, contacts are being made at industrial conferences, trade shows, student-hosted events and on-site visits.

Close links with the Campaign Office and the Professional Experience Year Program have also been made, informing firms of our available recruiting options and recruiting services. Advertising services in the Alumni Report and new Faculty publications have also been created.

Internal marketing of existing career services to students: All students will regularly receive informa-

tion about career-related events through email, posters, and departmental counsellors and student clubs. The creation of the PEY & Career section in *The Cannon* is one such service.

The Alumni Mentorship Program: Current students will have the opportunity to meet with graduates to discuss career options, career-related concerns and increase their network of contacts.

Website and Online Resume Database: A website and Online Resume Database has been initiated as well as a career site linked to the Faculty of Applied Science and Engineering and Engineering Alumni Association sites. This website will inform potential recruiters and students of the services and resources here at U of T.

Furthermore, the creation of an interactive, password-protected database containing resumes of all current and incoming students will ensure updated information for all students to potential recruiters.

Professional Development Seminars: Assistance with the advertising

and coordination of the *Creating Your Future* series supported by the Provost and the Registrar will be maintained and coordination of job search seminars and company information sessions will also be supported.

Career Resource Library: Engineering-specific career resources library located in the Engineering Career Office will be available to students for overnight loan.

Enhancement of Services

We hope to expand and enhance our marketing efforts and special engineering career events by directly marketing to thousands of firms in California, Ottawa, Calgary, Niagara Region, and the Greater Toronto area. There will also be increased membership in Professional Industrial Associations and increased attendance at trade shows and conferences.

In addition, there will also be more advertising in trade journals and development of the *Management of the Professional Development/ Career Options* series.

We will also be upgrading the existing Engineering Career Office website. Such upgrades include access to the online resume database, creation of a employment listing system, resource listings, and the alumni mentorship program.

Furthermore, we will assist with *Women in Engineering Mentorship* evenings for female students, graduates, and industry leaders (initiated by the Office of the Registrar).

Goals

The Careers Office maintains high goals for the upcoming year. Such goals include the achievement of 100% employment upon graduation and increasing average starting salaries by developing closer links with US firms, Management Consulting firms and Investment Banks.

The Office also hopes to increase alumni links to the Faculty by providing career services and opportunities to become involved in a variety of activities.

Congratulations! You, the students, have helped yourself by establishing and fully funding a highly specialized career office. You committed yourselves to raising the profile of the University of Toronto's Faculty of Applied Science and Engineering profile. Your initiative to increase the number of job opportunities available and fully prepare yourselves for the employment search have been noticed and commended by the Office of the Dean at the Faculty of Applied Science and Engineering, and the Office of the Provost at the University of Toronto.

We will be holding two information sessions for students interested in PEY, the first one on September 16th and the second on November 18th. The time and location will be posted outside the PEY office during the first week of classes.

I would encourage all students who are considering PEY this year to attend one of these info sessions. PEY student guides will be available throughout the fall in the PEY office (SF B740). Feel free to drop into the office and pick one up. The Office of the Registrar).

The Professional Experience Year: Test Drive Your Career

The Professional Experience Year (PEY) Program at U of T is an optional, internship program available to students after completion of their 2nd or 3rd year of full-time studies. A PEY internship consists of a 12- to 16-month continuous work period; that's three to four times the length of conventional co-op

placements. Students who participate in PEY have a greater opportunity to develop their ability to work independently and as part of a team, to assess and refine their career choice, and to enhance their communication and interpersonal skills, all while earning an excellent salary. It's the most effective way to *test drive your career* before you graduate.

Students who have participated in PEY have had the following to say about their experiences:

"I returned to school with new direction, new focus and

renewed determination. It has been a great 16 months."

"I obtained greater insight into the functions of engineers and the opportunities available to them."

"Before I applied for PEY, I wasn't sure that taking a year off of school to work was a good idea. Now, I am really glad that I did. It really gave me a chance to experience what it is like to be a full-time employee."

PEY Student Activity Schedule

	FALL ROUND 12 month work term only (Jan. 1999 start)	WINTER ROUND Commences Nov. 9/98 (May - Sept. 1999 start)	SPRING ROUND Commences Feb. 26/99 (May - Sept. 1999 start)
Job descriptions posted beginning	September 10/98	November 9/98	February 26/99
Deadline for PEY Application Form & Fee	September 25/98	November 27/98	March 4/99
Student job applications due	October 9/98	January 4/99	March 8/99
Interview notification (to students) begins	October 26/98	January 20/99	March 22/99
Interviews conducted on campus	November 2/98 - November 13/98	January 25/99 - February 12/99	March 29/99 - April 9/99
First job offers presented to students	November 23/98	February 23/99	April 19/99
Acceptance by students submitted to the PEY office by	November 25/98	February 25/99	April 22/99
Second & subsequent job offers presented to students	November 25/98	February 25/99	April 22/99
Company notification of acceptances/declines begins	November 27/98	March 1/99	April 26/99

Invest In Yourself

Marilyn Van Norman

Director, Student Services and the Career Centre

I have been asked by an outgoing Engineering Society Executive member to write an article on the importance of taking full advantage of everything the Career Centre has to offer engineering students. I am pleased to be able to do that.

An employer said to me a couple weeks ago after interviewing graduating engineers all day:

"It is amazing the variance in their (students) preparation for an interview. Some of them are easily able to articulate their skills, have researched my firm, know what we are about, what our challenges are, what future trends look like, and have great interview skills. Other, have simply read the job description, have little idea what we even do and are unable to sell themselves in the interview. Why

would this disparity exist when they have access to a state of the art Career Centre right across the street?"

I was hard pressed to answer. Yet, I know from feedback from Eng Soc executives over the past couple of years, that there are engineering students who are ticked off that they have to walk across the street to access job descriptions, much less use the Career Resource Library, attend employer panels or Looking for Summer Work seminars, take time to look at the Career Centre Online - www.utoronto.ca/career, register for workshops or seminars which are designed to help students write effective resumes and covering letters, look for work and prepare for interviews.

Fortunately, most engineering students having already made a huge

investment in the education, see the value of extending that investment to include their career education and do in fact take full advantage of the Career Centre. They are the prepared people going into interviews. They know what their skills are, they know how to tell an interviewer where those skills were developed and how they have been used in the past, they have a clear understanding of the issues facing the firm with whom they are interviewing and are able to convince the employer that their package of education, skills, experience and attitude make them an outstanding candidate.

The market right now is excellent for engineers, but we all know that the market is cyclical and five years from now, engineers who are in demand today may be looking for work in a less than welcoming market. Take the time today to walk across the street and learn for the rest of your career how to gain the competitive edge in looking for work.

Career Centre Services

- Career Counselling
- Career Resource Library
- Employment Services
 - Summer/ Part-time Employment
 - Graduating Students
 - Recent Graduate
- Extern Program
- Graduate Dossier Service
- Graduates Awards Database
- Resume Clinic
- Student information System
- Student Outreach Office-arrange for a special presentation to your department, faculty or group
- Special Events-panels, guest speakers, industry spotlights
- Volunteer Opportunities
- Workshops and Seminars-you must pre-register at Career Centre Information Desk
 - Discover your Skills and Options
 - How to Identify Work Opportunities
 - Learn How to Approach Employers
 - Interview Techniques
 - Resume and Cover letter Seminar
 - GSES Orientation

Career Development Certificates available upon completion of workshops

Description of Workshops and Seminars:

Discover Your Skills and Options:

Identify your skills, interests, personality, and values. Discover how your skills connect to potential career areas. Learn the steps involved in choosing your careers.

How to Identify Work Opportunities:

Uncover valuable techniques and resources that will enable you to find unadvertised work opportunities. Learn career exploration techniques such as using the Career Resource Library, informational interviews and volunteer work.

Learn How to Approach Employers:

Learn and practice techniques such as networking and cold call, to help you make contact with potential employers. Become more comfortable promoting your skills. Discover how to successfully follow up with employers.

Interview Techniques:

Develop strategies to enhance your effectiveness and how to handle difficult and typical questions. Gain interview experience.

Resume and Cover Letter Seminar:

Learn how to effectively market yourself on a resume and covering letter. Understand why covering letters are important and how to write them.

GSES Orientation:

The Graduating Students Employment Service Orientation helps students in their graduating year to learn how to identify the maximum number of potential opportunities. Participants learn how to create a powerful employment search plan that includes targeted positions that are not advertised.



Career Days-Do's and Dont's

Although you shouldn't expect to land a job as a result of a visit to a company table, you can significantly improve your chances of securing an interview, or, at minimum, identify some very promising leads for subsequent action by **EFFECTIVELY PREPARING!**

Do's

- Do know what you want to get out of the fair.
- Do select several companies you'd like to talk to before you go to the fair.
- Do read all the magazines and newspaper articles you can find about the companies that interest you (the Internet and Infotrack Business database are good places to start).
- Do practice a fifteen-second spiel that introduces you and explains your interest in a particular company.
- Do wait your turn in line and take notes.
- Do ask recruiters the best way to follow up.
- Do follow up.

Don'ts

- Don't just drop your resume and walk away; learn what the company is looking for.
- Don't ask for a job if you don't know anything about the company.
- Don't ask, "Do you have any jobs?" Hello!
- on't monopolize the recruiter's time.
- Don't assume you made such a great impression that you're a shoe-in for an interview. So did others. Follow up.
- Don't be afraid to ask what role the career fair plays in recruiting for the company.
- Don't overdress and don't underdress (err on the side of overdressing).

Taken from *Selling Your Stuff: The Wet Feet Press Mini-Insider Guide to Career Fairs*, 1998

Full publication available at the Career Centre.

Women in Engineers Mentorship Evenings:

This year, through the joint efforts of the Office of the Registrar, Faculty of Applied Science and Engineering and the Status of Women Officer, University of Toronto, we have initiated the Women in Engineering Mentorship Evenings. This will be a fantastic opportunity for women engineering students to meet with and learn about the personal and professional experiences of leading women engineers. Four or five women engineering leaders from a variety of industries and in various stages of their career will speak briefly about their experiences and then be available for one-to-one conversation. Female students in the 2nd, 3rd, and 4th years of the engineering program will be personally invited to attend of one of the six mentorship evenings.

Dates: Wednesday, September 23, 1998

Wednesday, October 21, 1998

Wednesday, December 2, 1998

Time: 5pm to 7pm

Location: Galbraith Building, Room 202—The Council Chamber

Stay tuned for more information!

CAREER TIP: Have a focused career plan...

The first step in the job search is to have a career path you plan to follow. Where do you see yourself in five years? Keep in mind that a career has to do with your entire life (family, friends, home, health, financial security, personal interests, etc) not just gainful employment.

Graduating Students Employment Service - Information Sessions

(as of August 14th, 1998)

Students who are graduating in 1999 should plan to attend these sessions. These employers will be advertising their employment opportunities at the Career Centre and most of them will be conducting their interviews on campus. Please visit the Career Centre for more information.

Date	Time	Location	Company	Discipline(s)
Sept. 22	5-7 p.m.	Sandford Fleming Rm 1101	Lattice Semiconductor	Electrical/Comp.Engineering, Com.Sci
Sept. 28	12-2 p.m.	Sandford Fleming Rm 1101	Andersen Consulting	Engineering, Com. Sci, Commerce
Sept. 29	12-2 p.m.	Galbraith Bldg., Rm 202	Nortel	Engineering, Com Sci, Commerce
Sept. 30	12-2 p.m.	Galbraith Bldg, Rm 202	Goldman, Sachs & Co.	Electrical/Comp. Eng., Com Sci
Oct. 1	12-2 p.m.	Hart House - Debates Rm	Monitor Company	All disciplines
Oct. 1	5-7 p.m.	Galbraith Bldg., Rm 202	McKinsey & Co.	All disciplines
Oct. 22	12-2 p.m.	Hart House - Debates Rm	PricewaterhouseCoopers	Computer Science

Please check the Career Centre website at www.careers.utoronto.ca for further updates.

Career Info Days

Dates: September 23 - 25

The career info days will take place at University College, East and West Hall. Below is a list of Exhibitors and Companies that will be at the Career Info Days.

Exhibitors

1. Certified General Accountants Association of Ontario
2. Institute of Chartered Accountants of Ontario
3. CMA - Management Accountants of Ontario

Company Name

Actel Corp.
ADP Canada
Aerotek Inc
AGF Management Ltd.
Alcatel Canada Inc.
Allied Signal Aerospace
AMS Management Systems Canada Inc.
Andersen Consulting
Apotex Inc
Bank of Montreal
Business Depot
Cadence Design Systems
CAE Electronics
Canada Life Assurance Co.
Canada Liquid Air Inc.
Canada Trust

Canadian Tire Corp. Ltd.
Capital One
Case Canada
CIBC - PERC
CompuGen Systems Ltd.
Computer Talk Tech. Inc.
Consumers Gas
Contact Singapore
Cosmair Canada
Daedalian Systems Group
Davies, Ward & Beck
Dell Canada
Descartes Systems Group
DMR Consulting Group Inc
Document Company - Xerox (The)
Dofasco Inc
Dominion of Canada General Insurance Company (The)
Dylex
Economical Insurance Group
EDS Canada
Ehvert Engineering
ElectroPhotonics Corporation
Enterprise Rent-A-Car
EntreVision Inc.
Gap Inc. (The)
GC - Canadian Forces Recruiting
Goldman, Sachs & Co.
Great-West Life Assurance Co.
Hatch Associates Ltd.
Hudson's Bay Company
Husky Injection Molding Systems Ltd.

IBM Canada
ILX Systems
Imperial Oil Ltd.
Ingersoll-Rand Canada Inc.
Inter Trans Logistics Solutions
Janna Systems Inc
Lanier Canada, Inc.
Lattice Semi Conductor
Linamar
Loblaw Companies Ltd
London Life Insurance Co.
Manugistics
Matrox Electronic Systems - Typhoon
MDS Sciex
Michelin Canada Inc.
Microsoft Corp.
Motorola Canada Ltd.
National Grocers
Netron Inc.
Nortel
Object People, Inc. (The)
Office Depot/The Office Place
Omnimark Technologies
Ontario Teachers' Pension Plan Board
Paragon Management Systems
Pencom Systems
Peter Kiewit Sons Co. Ltd.
PMC-Sierra Inc.
Pratt & Whitney Canada
Procter & Gamble Inc.
Progressive
Public Service Commission

RAM Computer Supply, Inc.
Research in Motion (RIM)
Richter Systems International
Royal Bank Financial Group
Scotiabank
Spar Aerospace Limited
Spectrum United Mutual Funds
State Farm Insurance
State Street Canada
Stone & Webster Canada Limited
Sun Life Canada
TD Bank
Tele-Direct (Publications) Inc.
Toronto
Toronto Stock Exchange
Tyco Submarine Systems
Visteon
Watson Wyatt Worldwide
Xilinx, Inc.
Future Shop
Ernst & Young

How To Prepare For Career Info Days

There will be seminars on how to prepare for the Career Info Days, on the following days:

Fri., September 11 from 2pm - 4pm
Tue., September 15 from 10am- 12pm

Pre-register at the Career Centre

Ten Steps to a Proper Employment Search:

Take the time to fully prepare yourself for your employment search by following these important steps. You will greatly increase your chances of securing fulfilling and challenging employment and greatly decrease your odds of feeling anxious and stressed out. Save valuable time later by investing time now, and by learning about yourself and the world around you.

The Career Centre offers structured support through many seminars, workshops, and information sessions.

One: Understand that in order to get the work you want, you may have to do more than check the employment listings in the newspaper and in the Career Centre.

Two: Assess your skills, interests, values and how they relate to potential work opportunities.

Three: Learn to articulate these skills to employers on your resume and during the interview.

Four: Create an up-to-date resume which highlights the skills you have, how they have been developed and what you have achieved.

Five: Know what your career options are and have a defined career objective. Research the skills necessary to meet your career objectives.

Six: Stay informed by reading newspapers, periodicals, and use the Internet to keep on top of local and global trends.

Seven: Develop good communication skills and learn to work well with others.

Eight: Ensure you are flexible, adaptable, and responsible for learning how to manage your work-life.

Nine: Understand that employment security means having the skills that are transferable and marketable and that you need to be continuously assessing and updating your skills.

Ten: Understand that through your university experience you developed skills that are in demand and are transferable to the workplace.

Preparation is key in finding your ideal career.

In order to help you prepare for your summer, PEY, or full-time employment search you will receive your own copy of High Tech and Engineering at registration.

CACEE, The Canadian Association of Career Educators and Employers created this excellent resource book to help you take control of your employment search.

Articles Include:

Looking for Opportunities through the Internet

Careers Abroad
Careers in Arts and Culture
How to Market Your Skills
Researching Employers
Self-Assessment
Interviewing Tips
Profiles on the Oil & Gas and Banking Industries
Do's and Don'ts of Business Meals
Tips for Resume Scanning
Index of Employers

Keep this valuable resource!



Professional Experience Year General Program Information

- (i) Students should indicate their interest in applying to the PEY Program by completing an application form and paying a \$40 administration fee, by the date indicated on the student activity schedule. The \$40 fee is a one-time only payment for the year. If after paying the administration fee, students choose not to apply to the PEY program a refund of \$35 will be given upon request.
- (ii) Participation in the Program is optional. Students will take part in the application/ interview process, and companies will offer jobs to the most suitable applicants. Once a student has signed a Job Offer form from the PEY Office, the student is committed to completing the work term.
- (iii) Students are responsible for completing all administrative documentation required by their Departmental Office and the Registrar's Office.
- (iv) OSAP loans become payable 6 months after a student discontinues full-time studies. PEY students are responsible for learning all of the options related to loan repayment and should contact their lending institution regarding repayment. Please note that PEY students are not eligible to defer this repayment as they are not considered part-time students under the government's regulations (you must have a 20% course load; PEY is not a mandatory co-op program - it is a voluntary internship program).
- (v) Occasionally students may secure a job through their own initiative and ask for it to be considered a PEY placement. Providing the employer is in agreement and the job is related to the student's academic program, the following conditions must be met:
 - The employer must provide the PEY Office with a job description for the position;
 - The employer must confirm that the employment term is a minimum of twelve months up to a maximum of 16 months;
 - the employer must be willing to evaluate the student's work performance at regular intervals when requested by the PEY Office;
 - The student must pay the PEY fee and part-time student incidental fees in order to maintain their registration as a University of Toronto student.
- (vi) Students are not guaranteed jobs. To secure a job, students participate in the application/ interview process. Employers offer jobs only to the most suitable applicants.
- (vii) For Engineering students, who will seek the Professional Engineering designation, up to 12 months of pre-graduation experience may be credited towards the four year practical experience requirements for applications submitted after June 30, 1999 by graduates of accredited engineering programs.
- (viii) Students work performance will be evaluated 2-3 times over the course of their work term, by their employer. Space is provided on the evaluation form for student comments, and students are encouraged to provide feedback.
- (ix) Successful completion of the PEY Program will be recorded as CR/NCR on a student's transcript, provided that all terms and conditions, as set out by the PEY Program and the employer, have been met.
- (x) Once a contract is signed students must complete the work term according to the terms agreed upon with the employer and/or the PEY Office. Leaving or quitting your job early without consent of the PEY administration will result in cancellation of your registration and a notation on your transcript which states "UNAUTHORIZED WITHDRAWAL FROM THE PROFESSIONAL EXPERIENCE YEAR PROGRAM."

Are you tired of not being heard? Well here's your opportunity to make a statement – join the Cannon! Whether you are interested in writing, drawing, doing layout or you just want to soak up the atmosphere and bounce around ideas. We're always looking for fresh new faces so come on out and bring us your creative brain! The best part is that no experience necessary. We teach you all you need to know, and if you can teach us, all the better!

So whether you're a F!rosh or whether you're an upper-year, don't be shy! And if you're lucky, there's free food! (no guarantees) If for any reason you can't make it and you're still interested, email the editor, Arnold Choi at <choi@ecf.utoronto.ca> or at <cannon@skule.ca>

Our next meeting is September 12. Watch for posters announcing the location. (We'll pick a really cool room for it.)

Club Reports

Welcome to the Club Pages. This section of the Cannon is dedicated to the the divisional and departmental clubs. Information on club resources, reports on recent events, as well as notices of upcoming events can be found here. Read the next issue of *The Cannon* for lists of club executives, as well as calendars of upcoming Club events.

ECE CLUB

Christian Gaolec
COMPOTO

Hi and welcome back to all ECE students. I hope everyone had an enjoyable summer. As you may or may not know, the club executive renovated the common room (located in the basement of Sandford Fleming, room SFB560) and I must say that it is looking good. To celebrate, we will have a 'grand opening' in the form of a *Smoker* early on in September. Don't miss it! It is your chance to meet other ECE students and have a couple of BEVERages (no smoking though!).

In addition to the smokers throughout the year, we have other events planned. There's the *Dinner-Dance* coming up in November, the

third-year *Ottawa Trip* in January (one week off Skule...need I say more!), and of course who can forget the *Chariot Race* (we're going to three-peat this year!).

As well as planning events, the ECE club is here to help you, so if you have any questions, suggestions or concerns about the department, just bring them to our attention and we'll do the best we can to resolve them. Our office is just down the hall from the common room (room SFB640). You can either leave a note in the suggestion box, call us (978-3980), e-mail us (ececlub@ecf) or talk to any one of us. Don't be shy to give us a piece of your mind.

Well, I'll finish by saying *get involved* (specially the Frosh). We're here to learn but we're also here to have fun. Hope you all have a terrific year!

CIV CLUB

Jeremy Wohleber
CIV979

As a civil engineering student at ASKULE™, you are automatically and without choice a member (membership has its privileges) of the best club at SKULE™, CIV CLUB!! As a member you are obligated to participate in ALL CIV CLUB events. The CIV CLUB holds numerous SMOKERS throughout the year.

If you are not familiar with SMOKERS, now is the time to learn what they're all about. SMOKERS are

about DISGUSTINGLY CHEEP BEVERages, Pizza, loud music, and just having an all out great time with fellow CIVs. We will also be holding many other events including the First Annual CIVIL Golf Tournament, watch for it in late September.

Every year the CIV CLUB hosts the best Club dinner of all, the CIV DINNER, a semi-formal gathering of all the BEST CIVs held in late fall, where the "taps run freely" all night long! If you're still not convinced that CIV CLUB is the best club at SKULE™ then you'll have to come out and find out for yourself.

Come hang out (and copy problem sets) in the CIV COMMON ROOM, GB 405, or drop by CIV CLUB, GB 138, any time and get to know us!



Chem Club

Lefranc Matthews, Carl Spensier
CHE9T9, CHE9T9

[Taken from the Frosh handbook]

Welcome and congratulations for choosing UofT Engineering! We are the Chemical Engineering Club of UofT, hence CHEM CLUB! We represent all the Chem. Eng. undergrads. So all you OT2 CHEMS, yeah you, don't hesitate to voice your opinions and ideas, they are always welcome. Our location: Wallberg 249A. How to contact us: speak to our executive committee members (there will be a list outside our office) or leave a message in our Red Box (also found outside our office).

Okay, so what does the Chem Club do? Oh tons! We excel in providing pop for 50¢, a phone service for 0¢ (a.k.a. free! Yes free! Not 15¢, not 25¢ but FREE!), a microwave to heat up STUFF for free (no, it's not a bunsen burner!), table soccer/gittoni/foosball for free and above all, a nice ROOMY Common Room (Wallberg 248) with soft, comfortable, clean and elegant couches and chairs to relax in. So come by and check it out! That's Wallberg

248, can't miss it! Bring a friend, bring a fellow Chem or even friends from other disciplines. We also organize SMOKERS (parties with CHILL-OUT atmosphere where BEVERages and excellent food is served), the ANNUAL semi-formal Chem Club Dinner Dance, and our popular TABLE SOCCER/GITTONI/FOOZEBALL TOURNEY. Stay tuned for exact dates and watch for the posters.

You OT2 CHEMS are not only part of Chem Club but are also part of the UofT student chapter of the Canadian Society of Chemical Engineers (CSCHE). They act as a liaison between the national chapter and our student chapter. Our chapter organizes industry smokers where companies come in and hold an info session (a.k.a. JOB OPPORTUNITIES). The national chapter of CSCHE holds national conferences every year. Every CHEM undergrad has the opportunity to go, so if you're interested contact our chapter! You can find out who they are outside of Wallberg 249A or leave a message in the Red Box.

Finally, I would like to wish you all luck and happiness and I hope you enjoy all your classes and meeting new friends!

Have an explosive, smashing Skule™ year! CHEERS!

ENGSCI CLUB

Becky Smith
EngSci97B+PEY

Welcome back or should I say "Welcome Home!" All the action is starting early this year so try not to get behind in the fun. The first thing that you don't want to miss is the Engineering Science Book Smoker on Wednesday, September 16. The smoker is an excellent opportunity to buy, sell, and trade books for Eng. Sci. courses. Take the next few days to review your book list, find out from profs what they REALLY want you to read, get prices from the book store, then come to the smoker and get the real deals.

Not only is the smoker going to have great deals on books, but it will also be a great place to get some great deals on food and drink. Did I say FREE pizza??? How can we afford such a thing? Well, ASTRA PHARMA INC., a pharmaceutical company in Mississauga, is sponsoring this smoker. Representatives from the company will be around to talk about the industry and a little about what is going on with this bio-chemical company. They'll be talking about what's going on in

manufacturing and taking résumés for next summer. I know this summer just ended, but it's not too soon to be thinking about a job for next summer, or even for the next few years! Astra has hired PEY students, summer students, and permanent employees in the past and we hope they continue to do so. Plus, many Biomedical-Chemical professors will be around to talk about the option for anyone who thinks they want to know more about it.

Besides this great smoker, we'll be holding others, each highlighting one of the great Engineering Science options, once a month for the next year. But "option" smokers aren't the only trend we're starting (or following). Elections for class reps for those conscientious students who really want to get involved in the club will be held mid- to late September. We'll be starting our Friday night sports league too, not to mention showing off all the new features in the common room, including some very comfy couches. Be sure to stop by the common room (40 St. George, across the street from Galbraith) and take a peek at the "What's On" calendar for more events coming up. Oh, one more thing - make some time to go to a few classes.

Enviro Club

[taken from the *Flosh handbook*]

Welcome Flosh! This year promises to be the most exciting for the Environmental Club. The inaugural season of the Environmental Division has been a smashing success. In the past year, we were able to secure ourselves a common room in a PRIME location (SF1007) and it has been furnished with two very comfortable couches, a huge desk with chairs, and a microwave. And, let's not forget the mesmerizing landscape and logo that engulfs the rear wall of the common room. Unfortunately, you do need a

combination to get in, but a number of upper-years will gladly open the doors for you.

We need lots of enthusiastic students to help us prepare for the year to come. You'll play a part in establishing a set of rules for the following year. You can be a part of organizing events such as smokers or information sessions. You may even land yourself a position on the Executive Council. You may even get to meet the upper-years who will sell you their textbooks, or help you on your problem sets. BUT, the best part is... you'll be able to put the words **FOUNDING MEMBER** on your résumé. Now *that's* going to impress a lot of employers. So get involved and help out the "Club."



Doing the limbo at a one of the club's dinner dances.

Mech Club

Tim Christie
MECH01

[taken from the *Flosh handbook*]

Here you are. A Mechanical Engineering student. What does it get you? It gets you the privilege of being an elite member of the Mech Club. What perks does this have? Smokers with FREE pizza and pop, winter BBQs, and even a gala dinner/dance. And unlike politicians, this elected board wants to hear your complaints. Not only hear them, but bring them directly to members of the faculty.

Come and join the world famous Mech chariot race team during Godiva Week as we demolish ECE. If you're really lucky, you may even get to be the driver. "Lucky"... yeah, that's it.

You wanted to join a country club? You've joined the next best thing. A room has been dedicated to you. Go to MC225 where you can enjoy the luxuries of billiards and pop; lay back on a chaise lounge and relax in the company of your fellow club members.

Be on the lookout for our first smoker of the year. It's a great way to meet both people in your class, and upper years (who are great for buying books from, and helping with problem sets).

See you there!

when it will happen.

The club will also be organizing smokers sponsored by various companies. It's a fantastic opportunity to smooch up to prospective employers, get information about their companies, and hand out résumés.

Come out for an evening of good food and late night dancing at the annual Industrial Engineering Dinner Dance. Whatever the event, getting involved with the club is a great chance to have fun and make friends.

As and Indy, you also have the chance to join the Canadian Society of Industrial Engineers (CSIE). Members receive monthly issues of IE magazine and have the opportunity to attend the annual conference. It's also another great way to make contacts and get your résumé passed out to a whole bunch of different companies.

The Indy Club offers you lots of ways to get involved as well as having fun. Be sure to join in the fun! See you soon, Flosh!

Indy Club

[taken from *Flosh Handbook*]

Welcome Flosh of 0T2 to the Industrial Club. As a full-time industrial engineering student, you are automatically a member. So read on and take advantage of everything the club has to offer you!

The common room, in the basement of Rosebrugh, is a great place to get cheap pop and snacks, use a free phone, and shoot a game of pool. The Industrial Engineering copy centre is also located in the common room.

It's where the club holds its monthly Smokers. Smokers are the perfect opportunity for you to get know people (fellow Flosh as well as upper years) while consuming cheap drinks and pizza. The Book Swap Smoker is a good way to buy virtually unused textbooks at bargain prices. Keep your eyes peeled for signs about

Mineral Club

Zach Voris
MINST8+P

Welcome to all Engineering Flosh!! You will soon be studying at the GREATEST SKULE™ IN THE WORLD! And for those of you entering the Mineral Engineering Program, congrats are in order. As a bit of a background, we are known as those weirdos who drink: Labatt 50, lick rocks, enjoy meandering around in mines thousands of feet [Ed: hundreds of metres] below the earth's surface, and now we're rich! A couple of years ago, Pierre Lassonde (the CEO of a major mining company) decided to endow us with a hefty \$5 million! So far this money has been used to buy a

couple cases of beer, and a few bingo dabbars. Oh yeah, and a bunch of mega-computers (the Comps are all jealous), a whole new common room in the Mining Building, and a few more faculty who will help to make this the best damn mineral engineering program in the world! Some cash is still set aside so we can give out some great big scholarships every year (better keep those grades up!).

Again, welcome to your new life. Come by the Mining Building and check us out. You can peruse the Mining Hall of Fame and soak in some guru vibes, or flop down on a couch in The Rock Lounge (MB130) and marvel at the the décor. Don't be afraid to talk to the upper-year students. We bite, but not too hard (and only on request), and you can find out what your next four years (give or take) are going to be like.

MMS Club

David Elsner
MMS 9T9

Well we can all can say good-bye to our Summer of '98 and Hello to our 98/99 year of festivities. I would like to welcome you all back and assure you that in keeping with tradition we will all join in giving our FLOSH a warm welcome.

For those of you joining us for the first year I would like to point out our common room located in the Walberg Building, Room 143. The MMS Club is proud to boast a pop machine that dispenses cheap soft drinks (but not quite as cheap as Mom's fridge) and a refrigerator that doubles as both a reasonably cool place to keep your lunch and a science experiment in growing cultures. Our couches are second to none in sinking ability and add a warm 'home away from home' atmosphere.

Lockers are available for all to use. But be forewarned: it is somewhat

foolish to give more than 10 people the combination to your locker.

Once a month we transform our common room paradise into a social gathering featuring 'beverages' and pizza. This is our time to socialize, relax, and enjoy. Our monthly 'Smoker' gives us all a chance to get together and party. As well as our monthly 'Smokers' we also have an annual club dinner that honors some of the people who contribute to our MMS Club. Don't forget to check our bulletin boards for dates and times of upcoming social events. You wouldn't want to miss them! A word to the wise: For those of you who chose not to attend, you'll probably be the one talked about during the 'Smoker'.

For those of you who know me, I'll look forward to seeing you in September. For those of you don't know me I hope I'll get the opportunity of meeting you in the common room.

Grab your hardhats! We work hard, we play hard, and we're all on the same team. Let's all have a successful year!

GO TEAM MMS!



Piece of History

Continued from page 8

promote "soft" skills outside the classroom, and

3. Other comments revolved around the need for direction for the future.

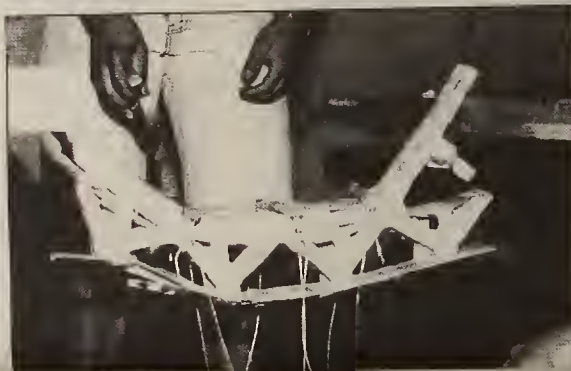
In particular the comments were as follows:

- tangible examples are needed before we can get a better idea of how these items are to be implemented.
- if this is to be implemented for accreditation purposes we need to know how the skills will be measured.
- it was suggested the list be made available and promoted to students so they know what is required of them when they graduate and therefore, they may be encouraged to pursue them on their own.

- we would not like to sacrifice technical content. Many professors are leery of adding to a course already packed with content.
- many of these skills can be picked up during the four years as an EIT before becoming a P.Eng.
- during the workterms which take place during the undergraduate programs students are also exposed to the listed items. It was suggested that the coop program co-ordinators receive the list and are encouraged to present it to employers in their literature.
- students are starting to feel overloaded with all of the things they are required to know.
- encourage universities to promote extra-curricular activities at their schools. Activities such as: MiniBaja, SAE racing, Propane Vehicle Challenge, etc.
- there has been some discussion for the move towards all engineering programs becoming five year programs to deal with the listed items.

- the new teachers generally tend to adopt the above listed items more readily into the classroom into innovative and more interesting means of applying theory. Examples include small design projects in the place of some labs, presentations of projects, etc. This is the direction of the future and this list would be imperative in the promotion of more innovation in future classrooms.
- the important thing to remember is that these items have been recognized by professionals as being very important skills.

The workshop brought out important feedback on the profile described and I would personally like to thank everyone for their contributions. The general feeling was that the items are important and the majority of students felt that currently the courses don't seem to be flexible enough to accommodate them alongside the theory.



EnLIGHTened Concrete

Clarey Marchand
The Sextant

Some of you may believe Civil Engineering revolves around trusses, reinforced concrete structures, surveying, and public works, but not much more. That has been my impression, so when I discovered fibre optics have been incorporated into the design of concrete structures, I decided

It all begins with the Intelligent Sensing for Innovative Structures (ISIS Canada). ISIS Canada, head quartered at the University of Manitoba, is a national Network of Centres of Excellence (NCE) dedicated to making Canada a world leader in Civil Engineering. ISIS Canada is a collaboration of several Canadian universities, the private sector, and the public sector. This organization aims to advance Civil Engineering through research and development in Advanced Composite Materials and Integrated Intelligent Fibre Optic Sensing

Technologies. The product of the resulting technology will be "innovative" structures, comprised of lighter, yet stronger, corrosion-resistant materials, and "smart" structures, equipped with integrated fibre optic sensors.

Five centres of research (Themes) are distributed across several Canadian universities. Intelligent Processing and Remote Monitoring (Theme 3) is coordinated through DalTech's Theme Director Afab A. Mufti, a Professor in Civil Engineering and Director of DalTech's CAD/CAM Centre. Research at DalTech is focused on developing ways to manufacture smart reinforcements with integrated fibre optic sensors, to access the data produced by integrated fibre optic sensors, and to intelligently process and analyze the data acquired.

The latest technology in smart reinforcements include Fibre Reinforced Plastics (FRPs). FRPs are light, yet strong and corrosion-resistant. The fibre within these reinforcements can be used to monitor the performance of a structure and the advanced material reinforcing it. Light is transmitted through the optical fibre. A change in the strain of the grating induces a change in the reflected wavelength, which serves as data to be interpreted.

Tracking the behavior of concrete bridges, for example, through their construction and their lifetime can serve to quickly pinpoint structural problems, to prevent structural

problems from occurring in future construction, and to evaluate the usefulness of newly developed materials.

Doug MacDonald (a Ph.D. student), Steven Fitzgerald (a full time Research Engineer and a part time Ph.D. student), and Tasos Georgiades (a Masters student), working out of the Smart Composites Processing Lab on DalTech's campus, are responsible for developing and improving the technology to manufacture FRP rods through the pultrusion of the required composites. Care is given to ensure that the fibre optic sensors are centred axially in the FRP rods. In doing so, the possibility of cracks occurring in the fibre is greatly reduced. Patents related to this process have already been filed.

Mike Mahoney is a Research Professional with the Department of Civil Engineering working in DalTech's CAD/CAM Centre. He is continuing work begun by masters student Andrea Doncaster to develop software to process and transmit data from fibre optic sensors embedded in Pier 31 of the newly-constructed PEI fixed link. Mike is also looking into methods of data acquisition, including a cellular link between the fixed link and PEI as one possibility, and a satellite link as another.

For more information on this research and on ISIS in general, drop into the CAD/CAM Centre on the second floor of DalTech's C Building or visit the following web site: <http://www.isiscanada.com>.

Teresa's Tantrum

Teresa Huang
Mineral 979

As the cloud of dust explodes in the air, and each particle so gleefully prances down to the ground, my visiting aunt sighs, "Gee, I thought I had just washed these clothes." Yes, 'tis the season when one can test one's neighborly love.

Greetings and welcome back to school. I trust that you all had an eventful summer. Mine was as eventful as it was dusty. So my neighbors on the south side of our house were renovating their entire interior. For some peculiar reason, or perhaps, they just wanted to fully utilize the wonders of gravity, they chose to get rid of their wastes by dumping the rubble out of their windows. As a result, my family and surrounding neighbors were lucky enough to inhale literally, all the splendors of dust explosions. All summer long. The first mistake that my visiting aunt from the States made when she arrived was to pin her washed clothes on the clothes-line in our back yard. The second mistake was assuming that breathing was a healthy activity to undertake. Silly Americans, and you'd think that they'd know that in Canada, neighbors of the south are not to be trusted.

Aside from listening to my mother agonizing about my neighbors and developing mysterious lung diseases, this summer, I've also done something that I've always wanted to do. I have actually gone to Hart House and worked out, twice. No, seriously, I've been going pretty regularly since I made that retarded bet late spring. I was almost perfectly content with avoiding the sight of my UADD (under arm dingle dangle - a term I actually read in one of those eloquent and intelligent fashion mags years ago), until under the influence of no-sleep I agreed to bet on me being able to do 5 chin-ups by September. So I've been diligently working out, thinking that I would gain the upper-body strength needed to pull myself up. I've suffered meeting super buff men obsessed with the thickness of their upper bodies, with legs so thin, urrrg, I mean muscular, that their entire beings have been reduced to look like over-sized LEDs. At any rate, I still have half a month to go, but I've finally clued in that "upper-body strength" is an oxymoron to me and short of losing half my body weight, my pipe-cleaner (Hmmm... more like steam-tunnel cleaner) arms are not going to lift myself up. Oh well, at least I have seen old profs doing aerobics.

So Skule will be starting soon. Let me predict a fun and exciting year, with many ridiculous happenings to provide me with material to spew on paper. Do di do di do...

The Cannon is looking for dedicated staff members to help with articles, layout, photography and graphic arts. If you're interested in becoming a staff member, please email cannon@skule.ca.

If you have any issues or articles you would like to submit, please email them to cannon@skule.ca

Be a part of a vision.
Be a part of The Cannon.

In most cases, we just place an article from a back issue of the Cannon. However, it's pretty late right now, I'm really tired and haven't eaten, and there are about eight flats that still need to be waxed, and frankly, I'd rather write this filler myself, than go looking for one.

This page is what we call a "Filler". It is typically used when there are large spaces that need to be filled. This is usually achieved by reprinting old articles, silly pictures and useless text.

Did I tell you that I just got wisdom teeth pulled out? Man. It sure does hurt. Well. I hope this is long enough and somewhat appealing to look at. But I don't really care. I'm going home.

(This has been a message from the Editor. If you're interested in writing fillers, please email your filler to cannon@skule.ca)

Professor Profiles

As one of the co-editors, I would like to welcome everyone to this new feature in the Cannon. Each month, "Professor Profiles" will put the spotlight on one of the many fascinating members of our faculty: Just who are they? What do they do? What are they like? For our inaugural issue, we felt it would be appropriate to focus on the life of our esteemed Dean.

Michael E. Charles

Karen Chang
Eng Sci 071

Dean Charles studied Chemical Engineering at the Imperial College of Science, Technology, and Medicine in far away London, England. After obtaining his undergraduate degree, he proceeded to work with the Alberta Research Council and Imperial Oil, and received his Ph.D. from the University of Alberta. It was then that he felt the pull of the educational field and decided that was where he wanted to be. He was offered a position at the University of Toronto, and joined its prestigious faculty as an assistant professor. In 1975, he became the chair of the Chemical Engineering division, a position he held for 10 years. Dean Charles then served as the Vice-Dean from 1986 to 1993. He has held the post of Dean since then. During our interview, Dean Charles explained a bit about the process of becoming Dean. The Provost puts together an advisory committee who selects a candidate based on their level of scholarship in their field, experience in administration, as well as student opinion.

When asked to describe his job, the Dean promptly replied, "It's the best job in the world!" He likened it to being the CEO of the Faculty, co-ordinating about 3000 undergraduate students, 1100 graduate students, 200 professors, and 200 adjunct professors. One of his main responsibilities is

finding resources for the faculty. As if that wasn't difficult enough in these times of spending cutbacks, the Dean also acts as our representative to the President of UofT and the Provost. He is in contact with government representatives, as well as business and industry leaders to promote the UofT Engineering image. Closer to home, the Dean meets with directors and



the Dean meets with directors and department chairs to keep his finger on the pulse of the Faculty. There really are, as in his words, "an unlimited amount of things to do."

I asked the Dean just what does he like about his job. He told me that he enjoys the privilege of meeting with alumni, and seeing what they've contributed to Canada in terms of leadership, business, industry, and

involvement in public and private institutions. Seeing students today, watching them develop and progress knowing their potential, and having a role in their education is very rewarding for him. But there are downsides to what seems to be a dream job. Although he admits that there is nothing really frustrating, there are always people problems that arise, as well as the ever-problematic issue of shrinking facilities. Things are more difficult from a funding perspective, with the Ontario Government cutting its funding by 15%, reducing the base budget from year to year. Due to these cutbacks, fewer professors and staff can be supported out of the budget. Although this is bad news, it leads to proactive work; starting programs with alumni, and corporations.

On a more personal note, we talked a bit about family life, and hobbies. He is the father of 2 children. His son, also an engineer, is currently practising law. His daughter graduated from UofT in environmental toxicology and is currently working at Ford Electric. I asked him if he missed having them around. He just smiled and told me that he likes seeing them do their own thing. The Dean has always been interested in outdoor activities, be they hiking or sailing. He also enjoys oil painting and sketching. He finds less time for such things these days, but hopes to do more after retirement.

When asked what he plans to do after retirement, Dean Charles said that he would keep in contact with the educational business, as he likes helping students reach their educational goals and ambitions. He enjoys travelling, and gets to do his share these days visiting places like Singapore, France and Germany setting up joint research and exchange programs. As a message to the students, he strongly encourages them to do part of their program at a collaborating university outside of this country. "It's a great way to open your horizon to different opportunities and cultures."

We hope you enjoyed our premiere article. Is there a favourite professor that you would like to see profiled? If so, please email us at changka@ecf.toronto.edu or kany@ecf.toronto.edu and give us their name, and a way to contact them (phone, email) if possible.

Fast Facts

Name: Michael E. Charles
Position: Dean, Faculty of Applied Science and Engineering
Since: 1993
Length of Term: 7 years

History of the Office of the Dean (or, How the Universities Got Set Up.)

Vera Kan
CIV 979+PEY

If there is one thing that befuddles the average student, it is what the Dean does. (ed note: I hope we've answered this one in the interview with Dean Charles) If there is another, it is how this whole university-structure-setup thing resulted in our having a Dean anyway.

Perhaps we should start with a little history in higher learning to put things into perspective. During the medieval ages, the only learned people in Western Europe were those in monasteries. (The rest of the population was generally uneducated) Schools were set up primarily for religious study. In the case of England, a large number of religious colleges eventually materialized at the town of Oxford, with rival colleges later set up in Cambridge. These colleges coalesced to form universities, named for the towns they were founded in.

Until the 1850s these two universities were dominated by clerics, after which they became increasingly

secular and more varied in their academic offerings. There was no faculty but for Arts. Medicine wasn't offered at Oxford nor at Cambridge until this time. Law was an offshoot from Arts. Engineering didn't exist as a faculty.

Though U of T began its existence with the secular University College (hence it was sometimes called the

"god-less college") it still borrowed an awful lot from the English system. Smaller religious colleges, like Victoria, St. Mike's and Trinity eventually joined with the secular university, becoming more secular themselves in the process. Most of the other faculties were set up from scratch, or formed from having some pre-existing institution join the university (as in the case of engineering springing forth from the School of Practical Science in 1906.)

Back to Oxford. In the 1700s, the person appointed in charge of a college was called the "Head of House". From

amongst themselves they elected a leader, who was called "Vice-Chancellor." Each Head had a number of fellowships to which they could give to scholars.

These Fellowships basically gave a share in the income derived from property that the College held. (The college was a large, insitutional landowner, and rental income from the land helped pay for the upkeep the College.) People holding these fellowships were called Fellows. There were also Tutors, who did most of the teaching. As always, there were the students, some of which studied more, others studied less, and almost all of them got their degree.

Of course the structure of the Canadian university has evolved quite a bit. Instead of colleges preparing students for a life as a minister with a classical education, there are faculties that prepare students for a variety of professions, including law, medicine, engineering, dentistry, etc. as well as providing a liberal arts education.

The Deans are in charge of the faculties, the professors have evolved from both the Fellows and the Tutors, researching and tutoring. And the students? They haven't changed much, but they won't get their degree without a substantial amount of study!



Engineering Athletics

ENG-JOC: Engineering Athletic Association

Shyam Rao
COMP 010

1998-99 EAA Executives:

President
Mens' Director
Co-Ed Director
Women's' Director
Finance
Administration
Tournament Director
Publicity Director

FIROSH RECRUITMENT

Everything you have heard about Engineering at the University of Toronto may probably be true, however, contrary to carefully constructed stereotypes, athletic enthusiasm and talent do indeed flourish here. You, the FIROSH, have the opportunity to continue the sports you loved in high school and to venture into a new realm of sports.

There are two basic ways of athletic expression in the university: varsity sports (meaning intercollegiate), and intramurals (which consist of teams from the Scarborough, Erindale, and St. George campuses). The former is usually of a different calibre from the latter, which is most evident from the enormous time commitment that high competition varsity sports demand. Many Engineers manage to succeed in balancing Skule and varsity-don't write off your chances! However, participating on intramural teams is just as fun and rewarding and often the more popular choice.

Our menu this season....

Engineering produces an astonishing number of teams to represent us in the intramural system. Occasionally, enough interest is pooled within a more concentrated group to produce a team all on their own, like the Civil graduate's hockey team. More likely, an existing team (structure) is what you, the FIROSH, are looking for. Here is what this year's teams look like:

TEAM TYPE (Men's, Women's, Co-ed.)

Field Hockey	W
Volleyball	M, W
Ice Hockey	M, W
Basketball	M, W & C
Rugby	M
Waterpolo	M
Inner tube waterpolo C	
Indoor Soccer (winter)	M, W
Outdoor Soccer (summer)	M, W



Specials

Do not forget that there are countless tournaments that are held all the time throughout the entire year. Badminton, tennis, squash, co-ed softball - check with the athletic directors: they have mailboxes in Eng. Soc. Also check out events at the Athletic Centre or Hart House, the two main athletic facilities, for any sport you deem under-represented in the intramurals.

Quality Control - Divisions

Often, in sports as popular as field hockey or basketball, a wide range of skills exist within the swarms of interested, spirited signees. Yes, we do want ALL of you to participate and so we place several teams into different divisions to let people play at the level of expertise and talent suitable to them. You can carve out your own niche.

Division I : teams are generally more competitive, talented, impressive and just better.

Division II: teams are less competitive (more fun?), geared for athletes looking for a more easy going atmosphere.

Division III: for all of you slackers!

The Mad Firosch Hordes

The Firosch sign-ups held during orientation are always bombarded with enthused young uns' with no foresight with the result that each team (even lacrosse) has a cast of thousands. But don't be discouraged - make sure YOU sign up for the teams you really want because 80-90% of the signees will hit classes, assignments and mid-terms like a brick wall and they won't want to do what they so cheerfully volunteered to do during orientation (not that it would happen to YOU, of course). What you should, however, always keep in mind is the fact that participation in extracurricular activities is what makes your years as an undergraduate engineer easier to bear.



Don't like the sports available?
Create your own.

There are only a few things
that go faster than
U of T's solar car...



1. Light
2. Your parents' money
3. Ben and Jerry's ice cream???

Delicious Ben & Jerry's ice cream
available at the SAC Carnival
this **Friday, September 11.**

(Just look for our car).

University of Toronto

Solar Racing Team

sunrace@ecf.toronto.edu

[Http://solar.skule.ca](http://solar.skule.ca)